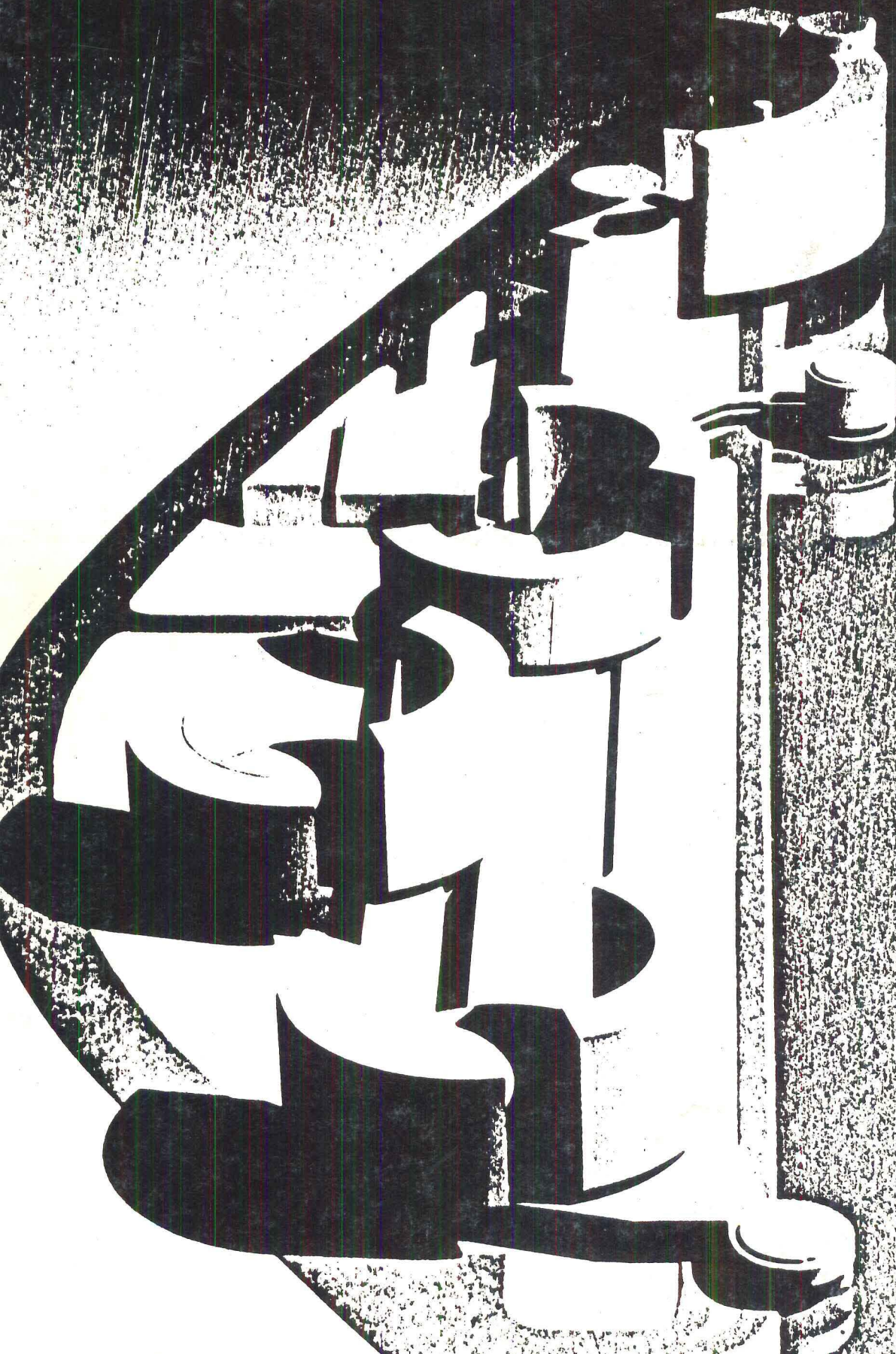


# Progressive Architecture

June 1972 A Reinhold publication







# What makes these ceilings right for this job

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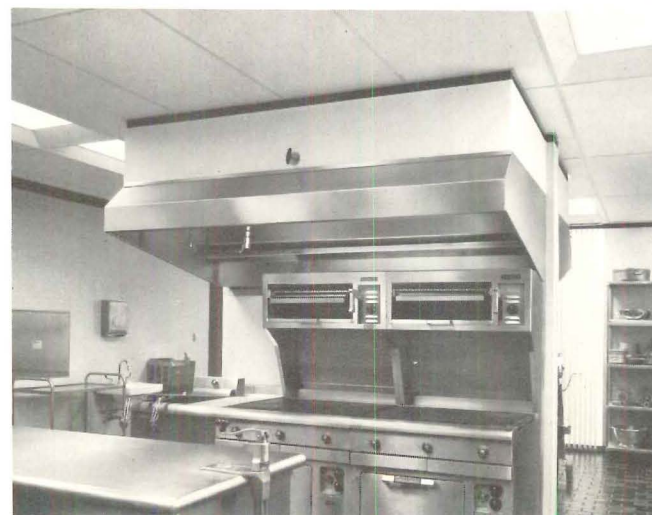
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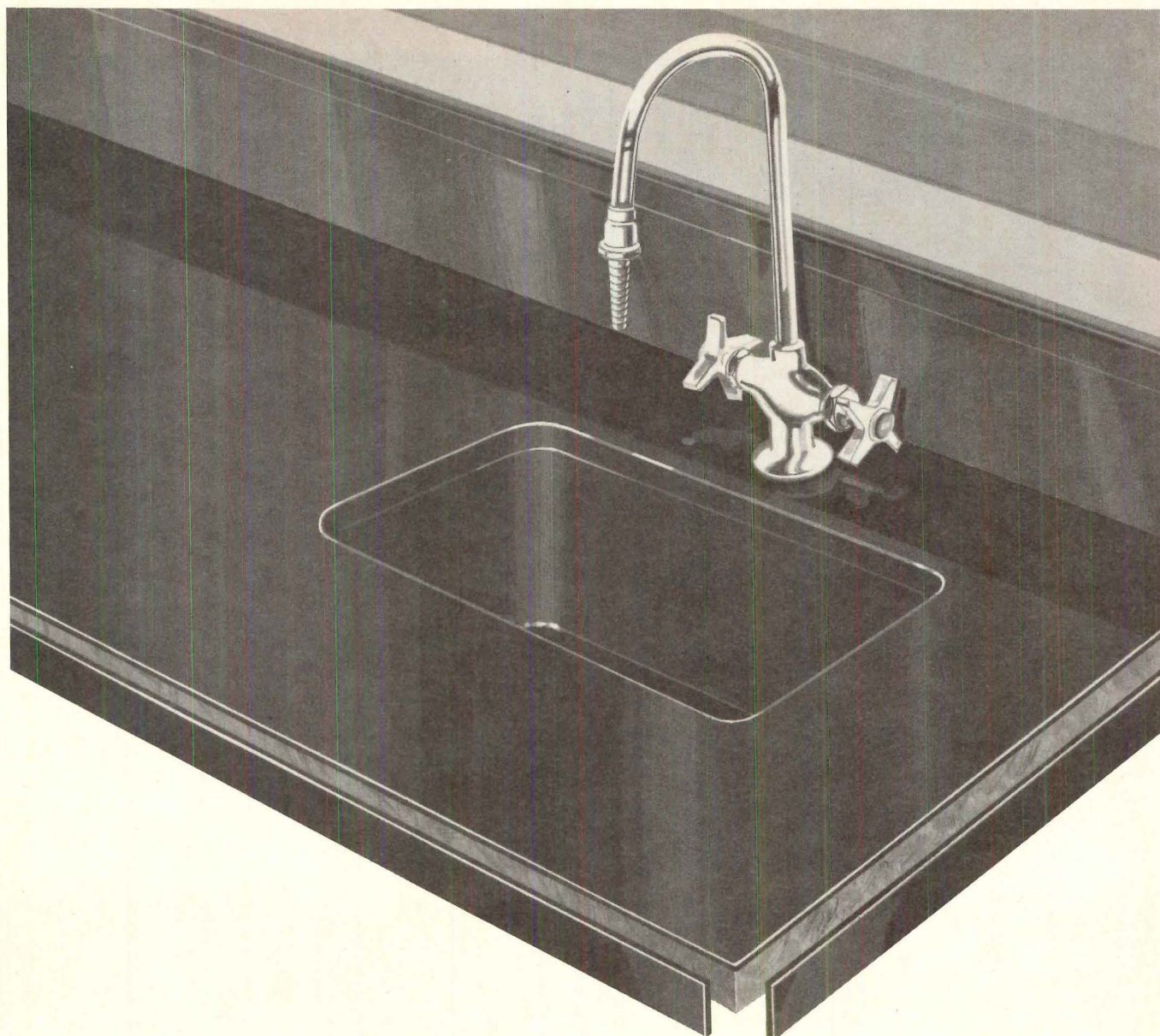
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**Armstrong** / **CEILING SYSTEMS THAT WORK**




Ohio Medical Indemnity Building, Worthington, Ohio  
 ARCHITECT: Karlsberger and Associates, Architects, Inc., Columbus, Ohio  
 GENERAL CONTRACTOR: G. W. Atkinson & Son, Columbus, Ohio  
 MECHANICAL/ELECTRICAL ENGINEER: W. E. Monks & Company, Columbus, Ohio  
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THE DURIRON COMPANY, INC., DAYTON, OHIO 



# "When you turn on 6000 faucets, you can't afford maintenance problems."

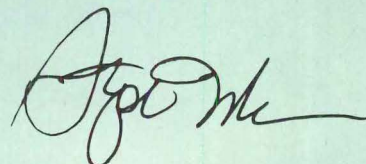
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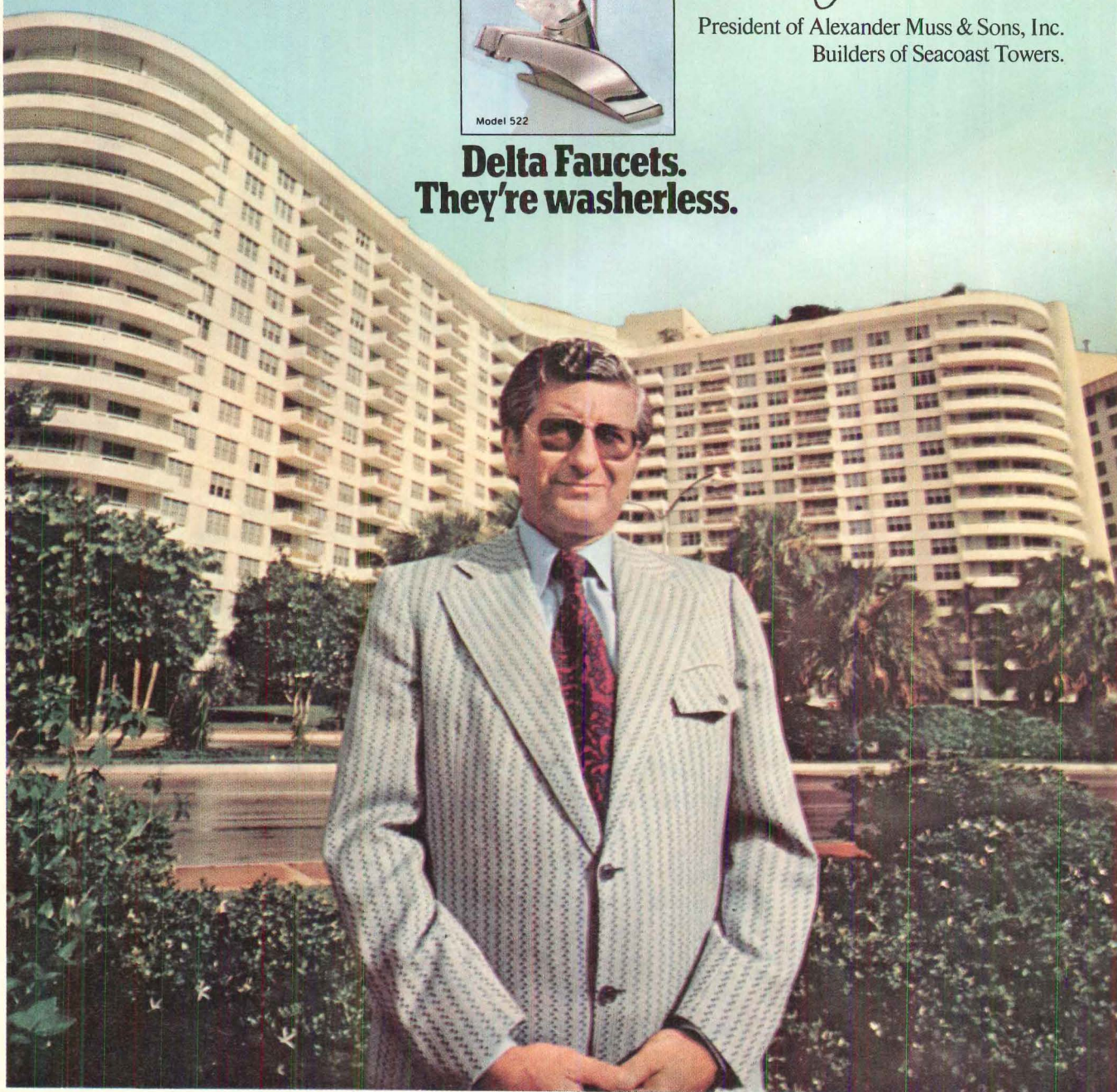
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President of Alexander Muss & Sons, Inc.  
Builders of Seacoast Towers.

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June 1972

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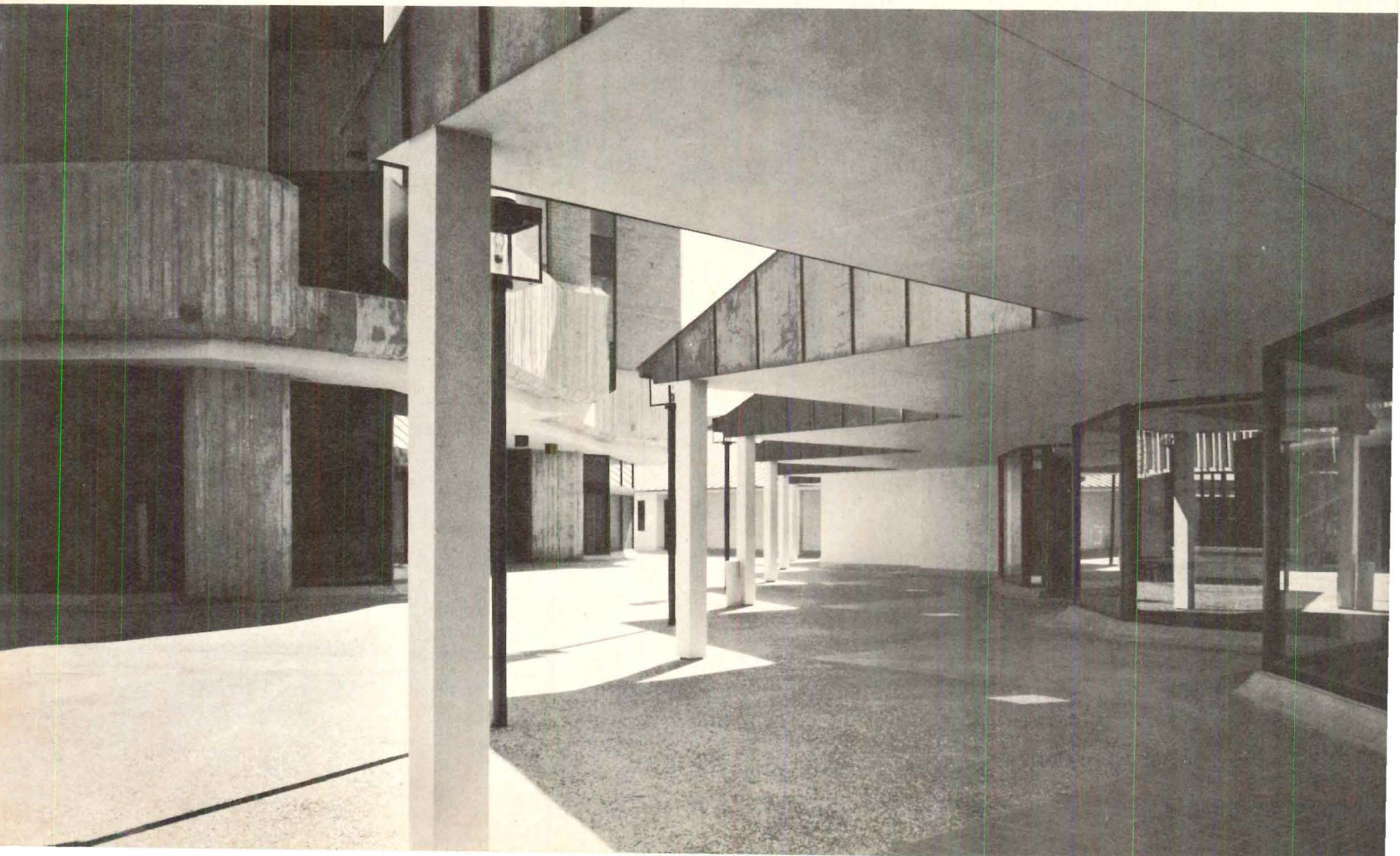
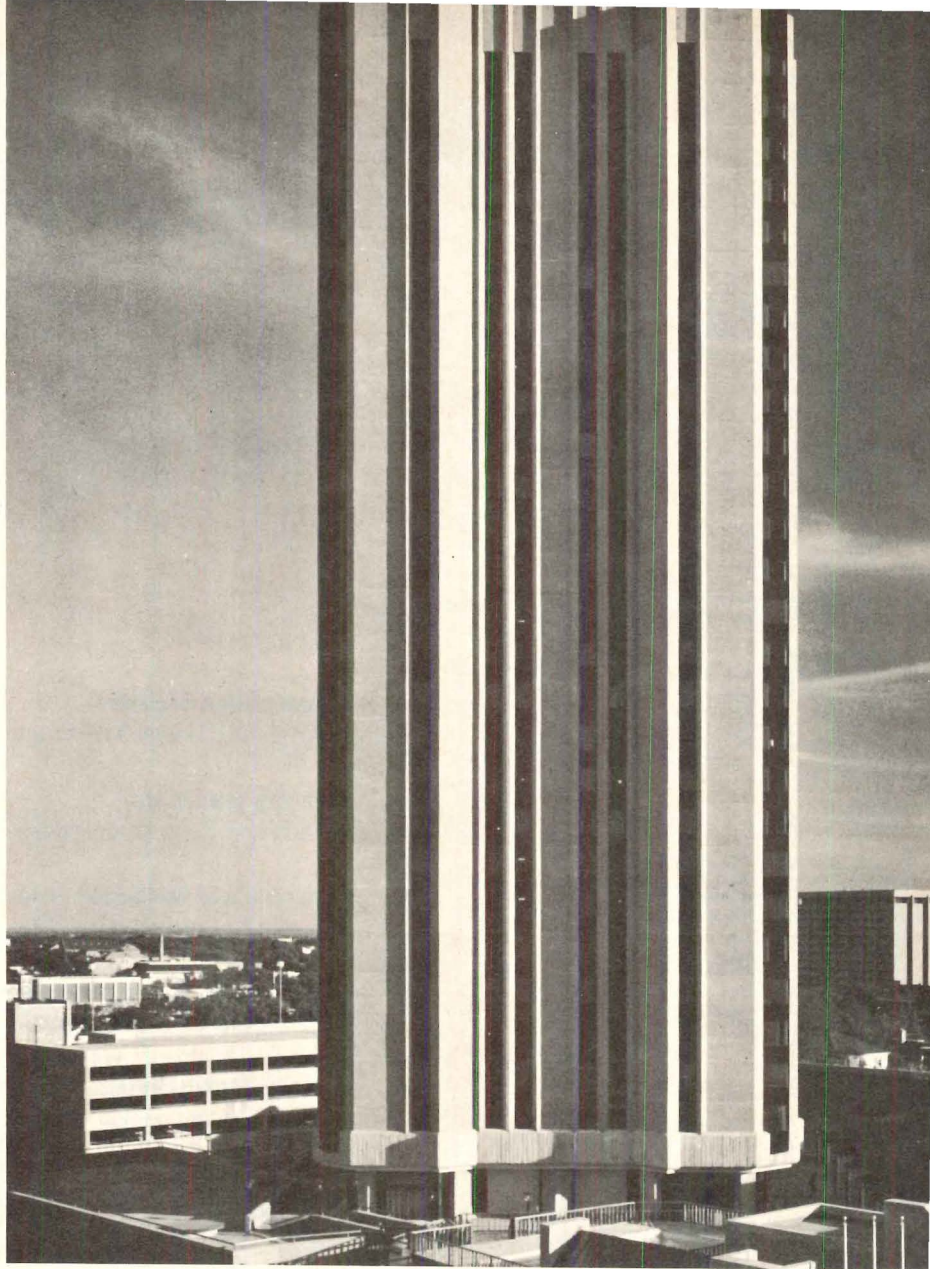
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**Cover:** A Xerox art abstraction of a model of the Marina City Development in Marina Del Rey, Calif., designed by Daniel, Mann, Johnson & Mendenhall.



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General Contractors: Guy F. Atkinson Com-  
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LUTHER TOWERS, Memphis, Tennessee. Architects: Walk Jones+Francis Mah, Inc., Memphis. Structural Engineers: LeMessurier Associates, Boston. General Contractor: ALODEX Corp., Memphis. Two Dover geared traction elevators, 200/250 FPM, duplex selective control, installed by Dover Elevator Co.





## A floodlight for tough environments...

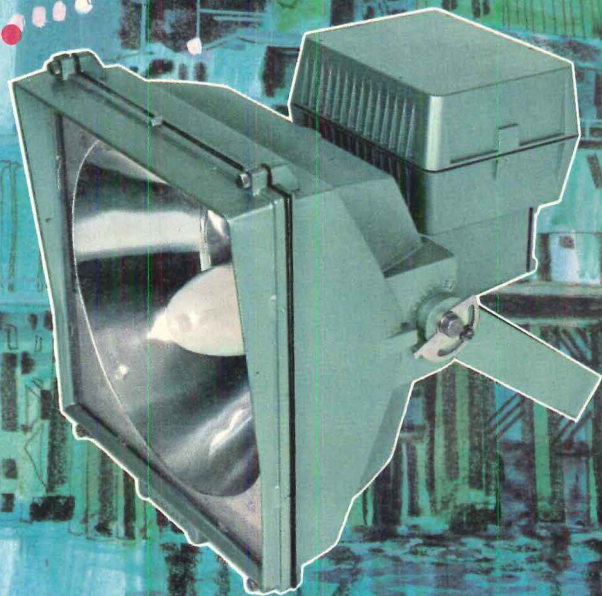
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# ews

## man/Graves

Editor: User needs notwithstanding, I am perfectly delighted to find that the world of ideas has once again found its way to the pages of a major architectural journal. I am, of course, referring to the March issue of *Progressive Architecture* and the article on the work of Peter Eisenman and Michael Graves (P/A, March 1972, p. 68). The paper is particularly interesting because, at least in some measure, certain necessary historical analogies through reference to footnotes place their work in a contextual time frame. I was, however, dismayed to note that Mr. Gandelsonas chose to omit certain cubist tendencies in Eisenman and Graves work. Some of us are aware, come from the philosophy of John Hejduk as well as the educational forces with which Professor Hejduk has been at work with his students at Cooper Union. Nonetheless, after what seems to have been an endless amount of time and coverage in recent years of certain forces in the profession rediscovering genre, the article is indeed a welcome change.

Jeremy Tigerman  
Evanston, Ill.

Editor: I enjoyed reading "On Reading Architecture" by Gandelsonas and Rodolfo Machado. It is encouraging to read intelligent architectural criticism that deals with questions of theory. Around the analysis of Michael Graves' work as a totally semantic structuring of space, images and notions from an architectural repository" useful in accepting the existing lack of syntactic relationship (al layering excepted) between curvilinear quotations from early Le Corbusier and the fragmented, additive, linear quality of the Benacerraf residence fa-

çades which seems derivative of Rietveld's Schroeder house.

It is with the assessment of Peter Eisenman's "House II" as being totally syntactic that one has difficulty relating the pictures to the words. Eisenman's aim may be "to unload the existing semantic" but so far he has only overloaded it (in terms of information theory). "House II" does not exist devoid of a context. Its context is the history of the ideal building and the formulation of the primary modern spatial types in Le Corbusier's Maison Domino and Maison Citrohan projects (plus the extension of the Citrohan idea laterally as in the Villa Sarabhai of 1955). This coupled with the particular way in which the "deep structure" is made to read on the "surface," derivative of Terragni's Casa del Fascio, give "House II" a compelling semantic dimension.

Stuart E. Cohen, AIA  
Evanston, Ill.

Dear Editor: One assumes the lesson to be drawn from pp. 68-87 March issue is: bad boy uptown architects ought not literally devour their copies of Volume 1, Complete Works of Le Corbusier, lest they suffer architectural indigestion and verbal diarrhea.

Eisenman/Graves are lucky though; they haven't eaten so many books as the Venturis. Perhaps they'll get well soon.

Jeremy Scott Wood  
Cambridge, Mass.

Dear Editor: It is with great pleasure that we have read Mario Gandelsonas' article in the March issue. A serious semiological analysis of architecture of the kind that Mr. Gandelsonas offers has been long overdue in the architectural literature of the USA. In this respect, the pioneering role of P/A is again proved.

That a significant dimension in architecture exists, no one concerned with the essence of architecture would discuss. But that the level of meaning shows a systematic nature and that as such it can be analyzed, is something that not so many will be prompt to acknowledge. Mr. Gandelsonas shows clearly that semiotics of architecture offers probably the most important clue to an understanding of what is essentially architectonic. He offers the perspective of an area of study and research that is concerned with architecture as *such*, which does not resort to foreign techniques or "sciences" to account for architecture, which is what has characterized the "research" in architecture in the past decade.

We have been working in the same area

for the past years at this university, and the first results of our endeavor are beginning to show a promising future. Students at Berkeley are becoming more and more interested in the dimension of meaning in architecture, somehow overshadowed in the past by the excitement of the "scientific" fads.

We praise Mr. Gandelsonas for his impeccable analysis and brilliant insights, not only at the level of the particular, and excellent examples shown in his article, but also and more importantly for the general perspective in the field of architectural theory that his article opens. We hope P/A will continue in the future with such an orientation, and give us more on the subject.

Rodolfo Machado, Associate  
Jorge Silvetti, Associate  
Department of Architecture  
University of California, Berkeley

Dear Editor: I have read with much interest the article "On Reading Architecture" and the editorial preceding it in the March 1972 issue of *Progressive Architecture*. The dichotomy between engineering and culture, described by P/A as opposing tendencies in the functional analysis of architecture, exists only in the perverted view of extremists. Systems analysis can offer a rational approach to the problem of psychological response to visual stimuli. There is a good consensus (i.e., small coefficients of variation) about the connotative meaning conveyed by the visual properties of architectural surfaces. We can consistently predict the aesthetic response to a brick wall with as great an accuracy as we can predict its compressive strength. Art and science are not enemies. Science can assist in establishing truth about beauty.

Clayford T. Grimm, PE  
Associate Director  
Center for Building Research  
The University of Texas at Austin

[I think Mr. Grimm has missed the point of the article. It doesn't say there is a dichotomy between engineering and culture. It says that in the current re-examination of the functionalist's point of view there are two opposing tendencies: the systems approach that tends to shift architecture further into the realm of engineering, and the approach that studies architecture as a system of cultural meaning. One wants to make architecture, the other wants to know what it is. The article does not claim that other systems of analyzing architecture are invalid. It attempts to provide

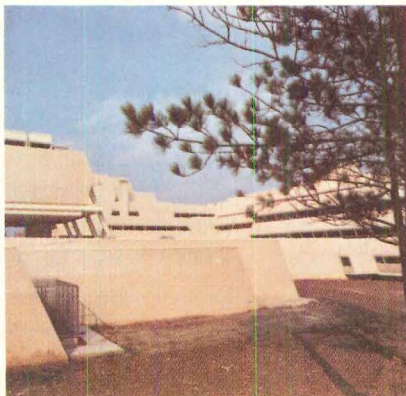
[continued on page 10]



Architect uses  
sloping steel columns to  
give building rugged  
dramatic effect







make the new headquarters and research building Burroughs Wellcome Co. seem like a natural extension of the ridge on which it is located, Architect Paul Rudolph used sloping steel columns in a geometric, modular design.

The structure, located in Research Triangle Park near Raleigh, North Carolina, combines the functions of corporate headquarters and research facilities.

The sloping steel columns, set at a 22.5-degree angle, help to make the building seem to be an upward extension of the ridge. The steel-framed irregular ends of the structure were designed to facilitate incremental expansion in all directions in future years.

Geometrical modular units are also a unique part of the design. The large skylights and inward-slanting windows made possible by this design allow light to flood deep into the interior.

The completed building will house about 450 employees, and will contain 300,000 sq ft of space. Besides research facilities and offices, there will be a cafeteria, auditorium, library, and a lobby three stories high.

Steel columns sloping 22.5 degrees are a major feature of the design. The columns rest on a system of footings and tie-beams in which the vertical load is transferred directly to the soil through the footing.

The Burroughs Wellcome Co. building was designed by Paul Rudolph, New York. Structural engineer: Lockwood Greene Engineers, Inc., New York. Steel fabricator and erector: Peden Steel Company, Raleigh, N.C. General contractor: Daniel Construction Company, a division of Daniel International Corporation, Greenville, S.C. Bethlehem Steel supplied 3,100 tons of ASTM A-36 structural steel.

**BETHLEHEM STEEL**





another way of looking at architecture so that one might learn more about it. DM]

#### Seamless flooring specs

Dear Editor: Oscar L. Vaughan did not thoroughly research his article "Toward proper seamless flooring specs," (P/A, Mar. 1972, p. 94) to come up with the May 10, 1971 Federal specs to which he refers.

He requests an industry-wide testing method be set up. There are hundreds. What he really wants is for everyone to manufacture the same product and be graded on its quality by some particular standard they all agree on. Under this system we would have a market of "one-ness" at different levels.

It is the responsibility of each manufacturer to produce the product for the market in which they wish to be represented. A spec writer then must decide what the market offers for his particular need.

Kenneth B. Vetterli

The Flecto Company, Inc.

Oakland, Calif.

[The following is Mr. Vaughan's reply to

the above letter.]

1 In regard to the May 10, 1971 Federal Specification, this is an interim specification called "Coating System—Decorative and Protective, Seamless," No. TT-C-001685. It was published after my article was presented to *Progressive Architecture*. However, this would not essentially alter the article as written. Paragraph 1.2.1 states, "This specification covers one type of coating system." A footnote further explains in part, "Other systems are not covered by this specification at this time." The article suggests one federal specification for all seamless systems. The publication of Federal Specification TT-C-001685 is a welcome step in the right direction. Since it is an interim specification, hopefully it can be developed to include other major seamless systems, all in one package.

2 I have never advocated that everyone manufacture the same product. I do, however, recommend that everyone use the same test criteria. In his own product literature, Mr. Vetterli lists 14 tests under the heading of "Physical Properties." One example is Test No. 7, Tensile Strength, ASTM D-412. If every manufacturer would use ASTM D-412 for tensile strength, it

would greatly facilitate comparing the relative tensile strength of one product against that of another product.

3 Mr. Vetterli claims that a standard method of testing would create a "one-ness" of materials. I say, not so! A standard testing method would allow for materials at any number of levels.

4 Standard testing criteria is now an accepted practice and procedure in many facets of the building industry; the Steel Door Institute Standards and the Architectural Woodwork Institute Standards are good examples. The standard criteria adopted by the Acoustical and Industry Materials Association mentioned in the article deals with many different materials and installation systems. There is no "one-ness" of materials. If others do this, why can't the seamless coatings industry do likewise?

O.L. Vaughan

#### Erratum

In the article on "Blueprint storefront" (P/A, Apr. 1972, p. 92) credit for the design of the façade should have been given to Amado Ortiz, project architect in the firm of James R. Doman, Jr., AIA and Associates.

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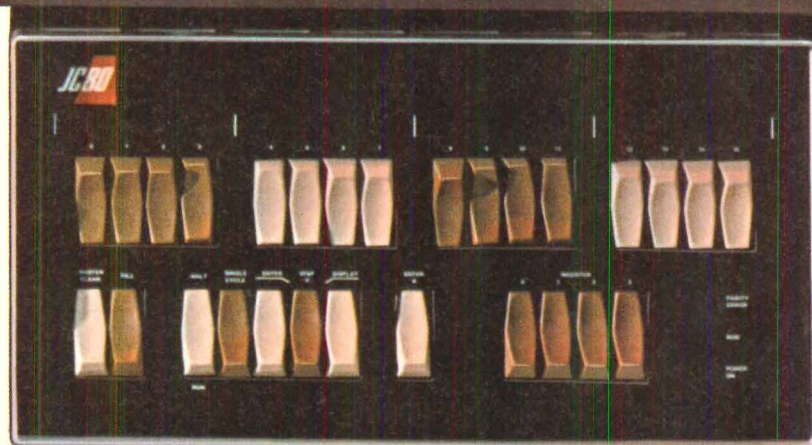
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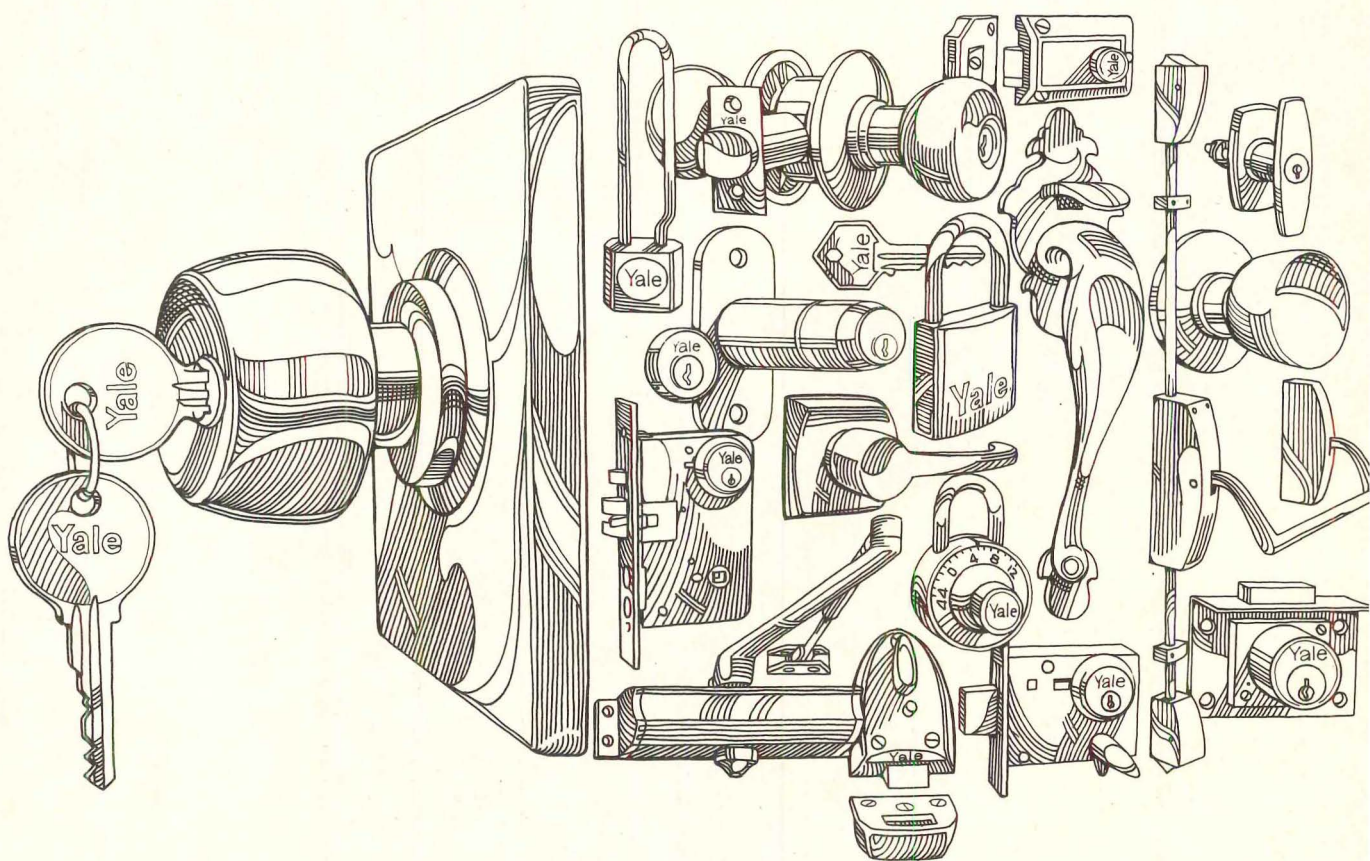
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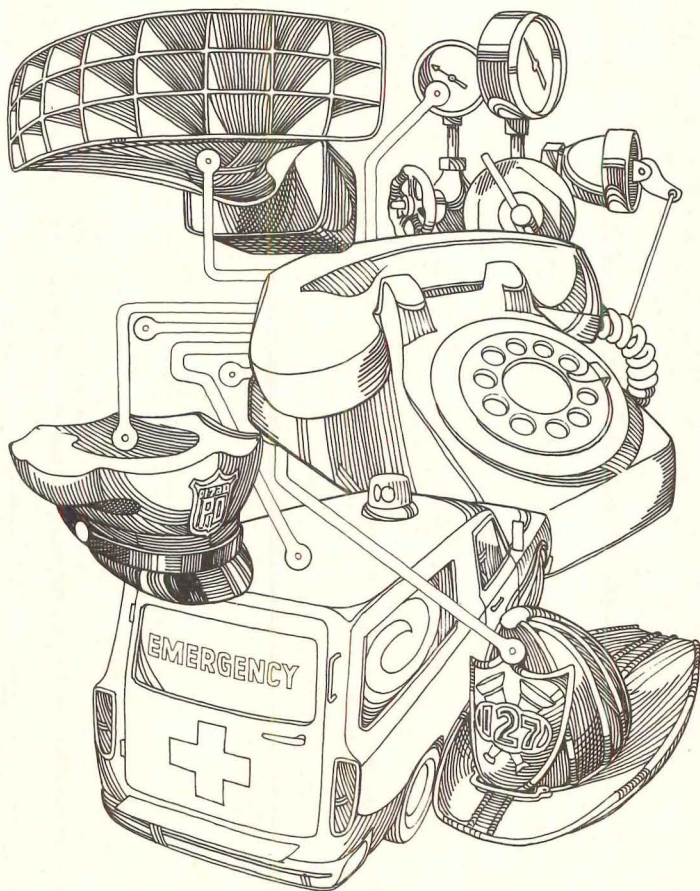
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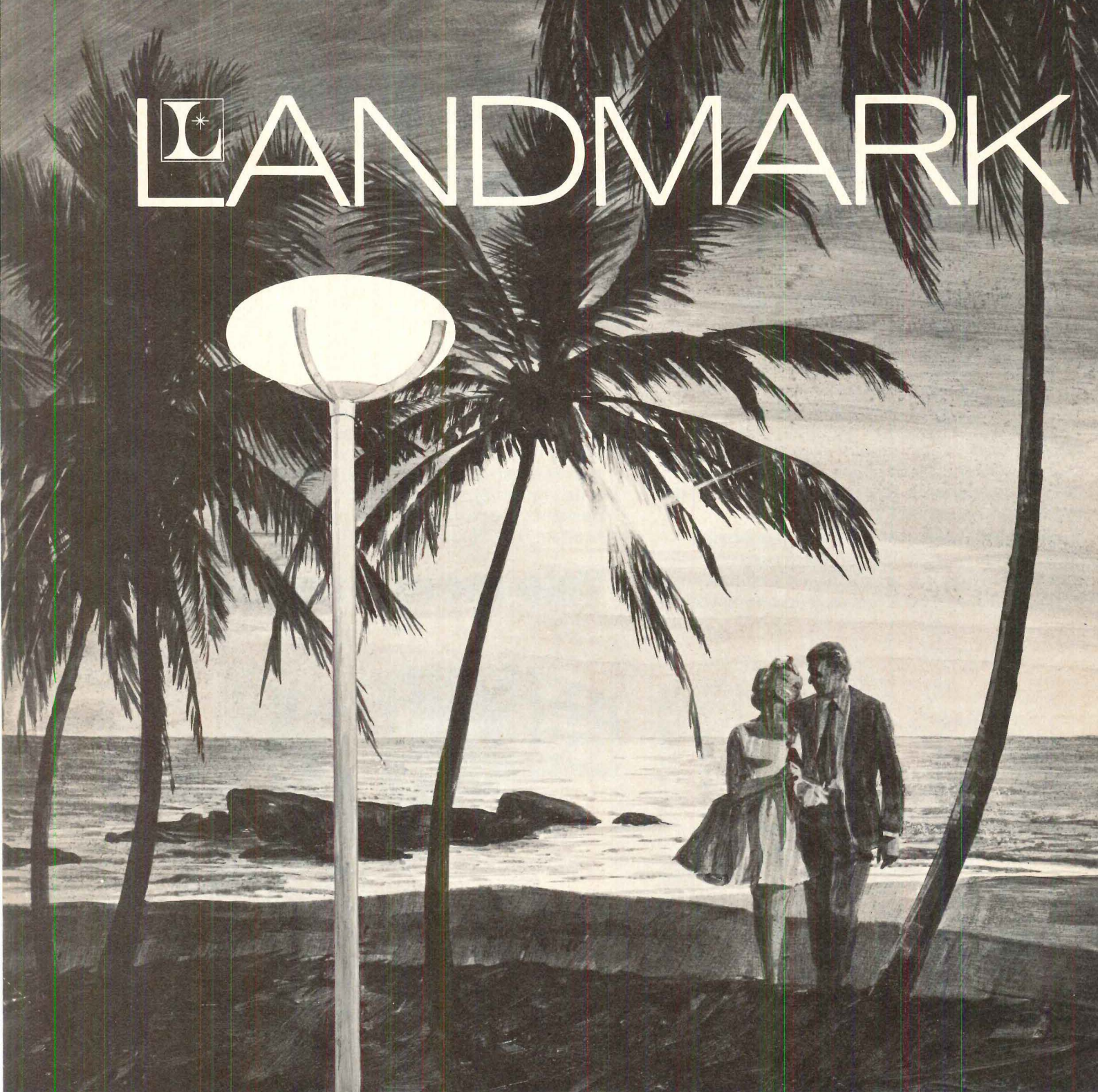
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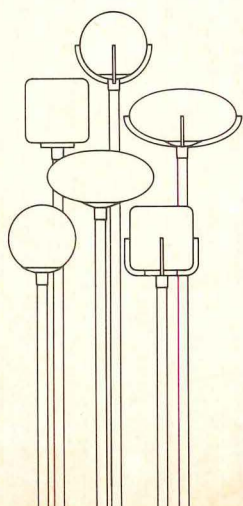
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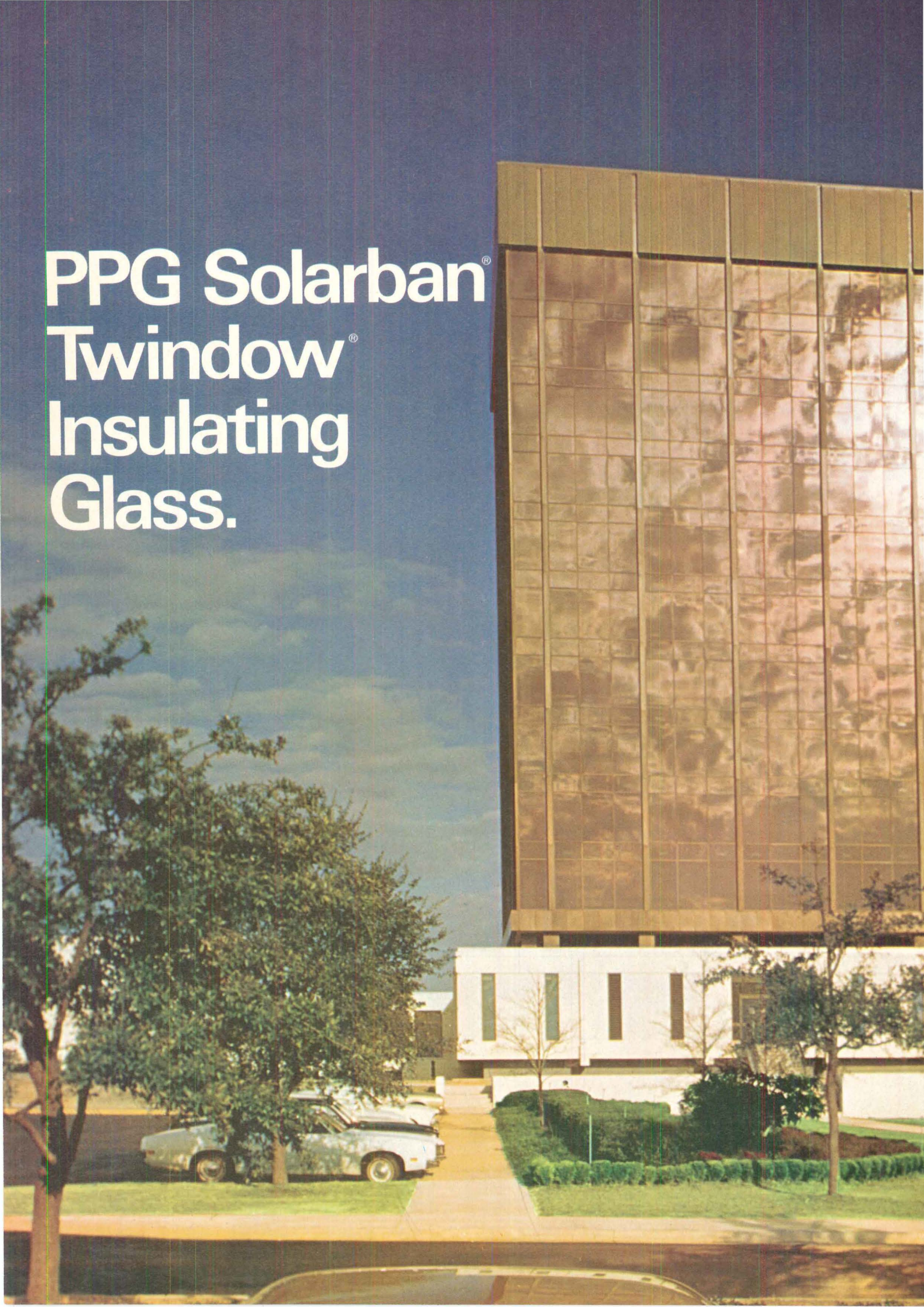
A tough interlayer of fiberglass-reinforced vinyl provides a firm bond between Quiet Zone's wear and cushion layers. This interlayer, with nearly 30 mils of strong fiberglass filaments in each square yard, adds to Quiet Zone's dimensional stability, its impact-damage resistance, and to the overall strength of the installed floor.







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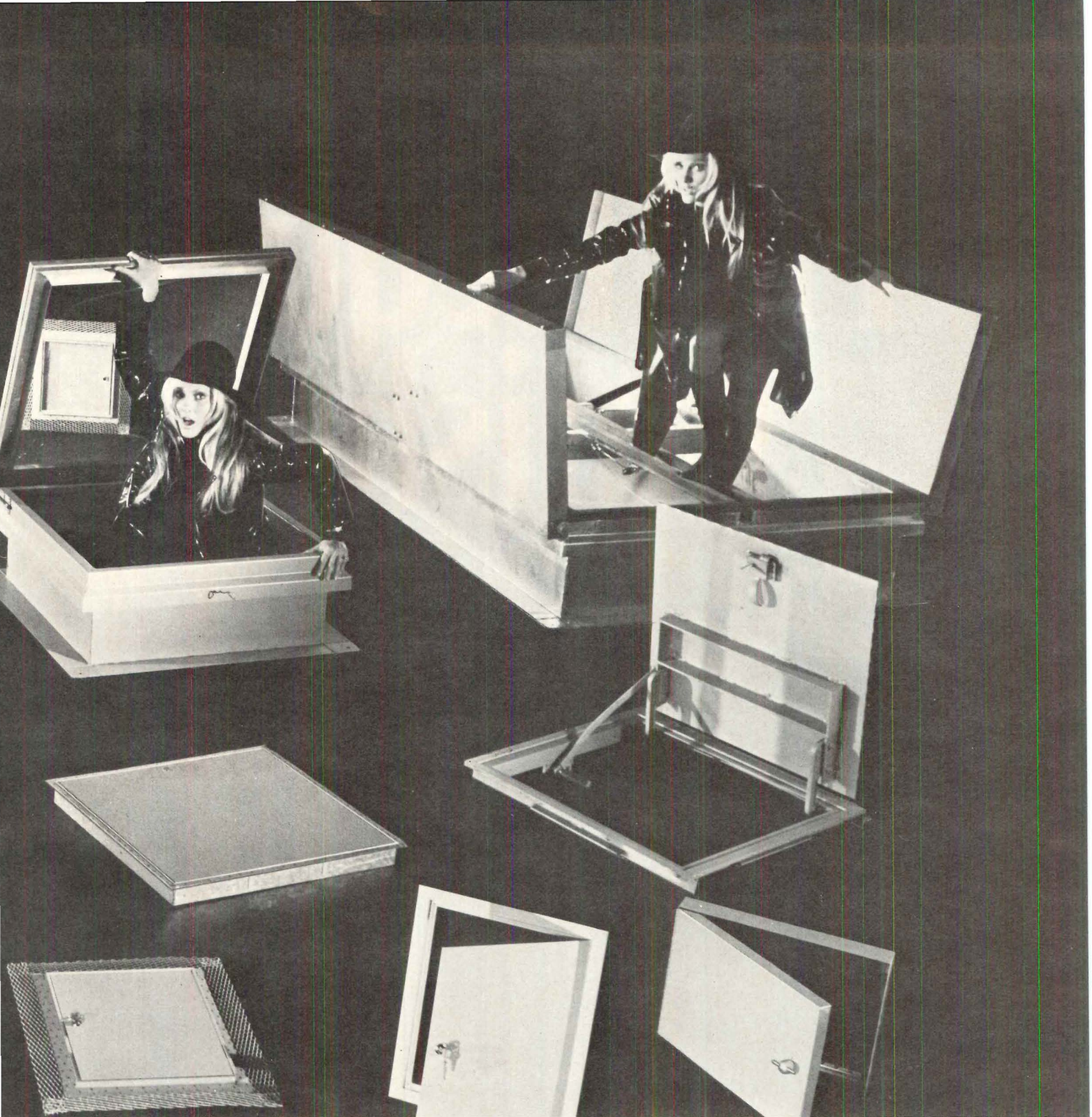
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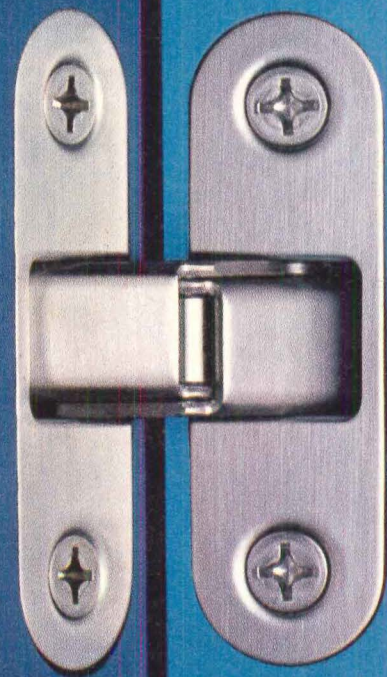
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**Buildings on the way up** 30**Awards** 48**Personalities** 48**Calendar** 55**Washington report** 55**Architecture west** 60**Products** 64**Literature** 66**Notices** 150

# News report

## Atlantic City landmark on its way down

By the end of the year, or sooner, if the demolition work goes quickly, the Traymore Hotel, for years an Atlantic City, N.J. landmark, will be no more. The owner, the Loew's Corp., started tearing down the hotel in January, despite an offer to buy the property and an attempt to halt demolition by legal action.

The would-be buyer, the AFL-CIO, offered \$2 million for the hotel, which it planned to turn into a retirement home for its workers. Loew's, however, held out for the \$3 million price they had put on the property, which has been assessed at \$2.3 million.

Legal action to block the demolition was filed by Attorney Morton Feldman, representing preservationists, and the National Trust for Historic Preservation fired off a telegram to the president of Loew's, urging that he reconsider the decision to tear down the hotel. It was all to no avail, as Loew's decided to go ahead with the demolition plans.

The destruction also poses an interesting problem for another local group. Ecological groups in Atlantic City are concerned about the effect on the city's trash disposal problems. It seems that none of the rubble will be salvageable; it must all be carted off as trash. The problem, according to the conservationists, is that all that trash might be too much for present dumps, causing the trash people to start new dumps, maybe in the ecologically delicate local marshlands.

## New solution for an urban greenhouse

People have been avoiding building greenhouses in Boston for quite some time, for some very good reasons—vandalism, soot and rising real estate prices that make such a low-yield operation unattractive. But the Gardner Museum wanted to move its greenhouses, which furnish fresh flowers and plants twice a week, from nearby Brookline to the museum site in Boston.

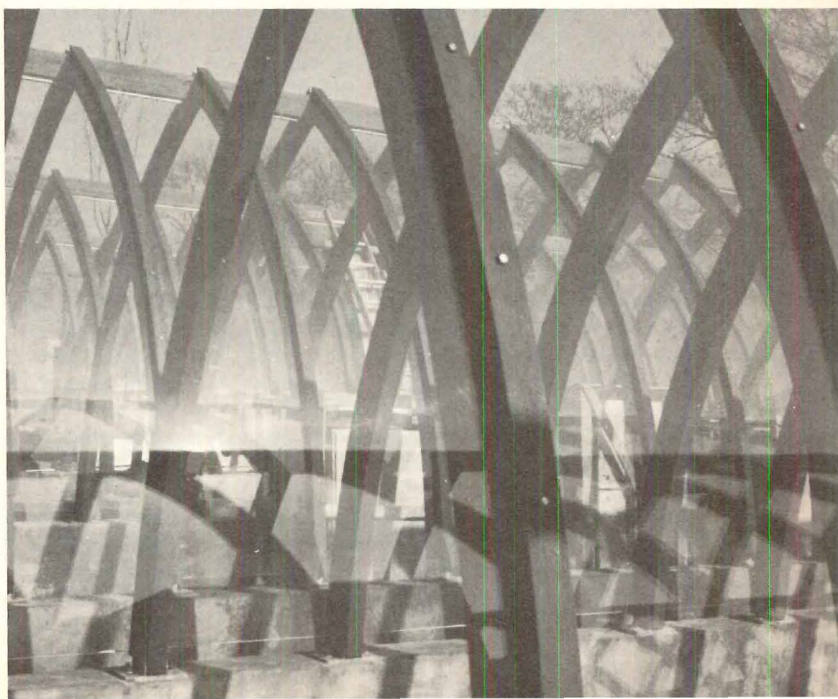
Glass was out of the question, according to architect James Lawrence, Jr., but clear plastic glazing seemed to offer the needed durability. The plastic, however, called for a greater slope to drain condensation on the inside, rain and snow on the outside. To solve that problem, Lawrence designed a steeply arched greenhouse, using laminated wood arches instead of the standard metal framing.

[continued on page 32]



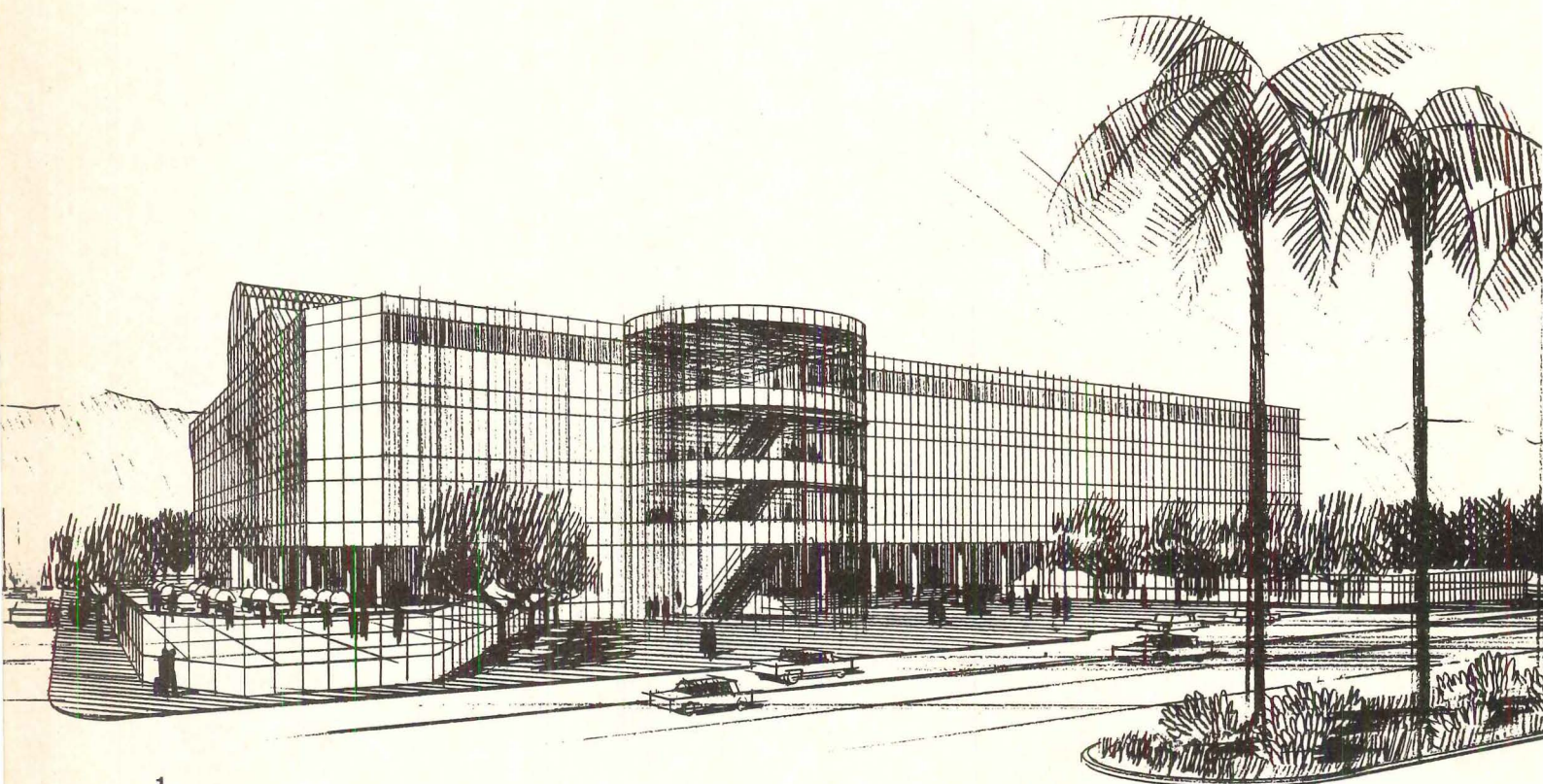
Last look at the Traymore

Arches for Boston greenhouse





## Buildings on the way up



1

**1 Blue and bronze glass** will sheathe the \$19.5 million Pacific Design Center designed by Gruen Associates; the blue glass will be opaque, and the bronze, which encloses the 70-ft-wide escalator space in a half cylinder on the front of the building, will be solar glass. A 55-ft-high vaulted skylight will run the length of the building's top level. Offices, meeting rooms, a restaurant and a garden will be provided, along with showrooms and exhibit space for the wholesale interior design trade. The building, 510-ft long, 200-ft wide and 115-ft high, will offer about 442,000 sq ft of rentable space.

**2 Second building** in San Francisco's Embarcadero Center will be a 35-story office tower to serve as home office of Levi Strauss & Co. Including besides the major tenants, 165,000 sq ft, there will be a total of 650,000 sq ft of rentable office space, plus 75,000 sq ft of retail space. Tower will rise above pair of one-story concrete and glass pavilions and podium that provides circulation above street level. High rise part of building takes up only one-third of ground space. Structure is high strength steel with light gray sandblasted concrete exterior. Architects for the project are John Portman and Associates.

**3 Three sites**, three buildings make one project for Benjamin Thompson & Associates, architects for 694 units of housing for the elderly in Cambridge, Mass. MIT is financing the three-site project, which is the largest HUD turnkey project ever approved. Once completed, the three apart-

ment complexes will be sold to the Cambridge Housing Authority for \$17,092,000. Buildings vary on each site: one is a 19-story high rise, using a renovated garage as social center and shopping area; another is 5-stories, with a 12-story wing; third (shown) is 6-stories high, in deference to local preferences. Needs of neighborhoods and prospective tenants were studied through questionnaires, committee meetings and cooperation between architect and developer and nearby homeowners.

**4 Town center** will give new town of Park Forest South a 3-mile-long spine for municipal, commercial, educational and recreational activities. First phase of town center will include a supermarket and drug store, department store and other shops in about 143,000 sq ft, along with the developer's information center; phase two will provide space for offices and municipal services. Harry Weese & Associates and Barton-Aschman Associates, Inc. are planners for the project.

**5 Self-contained** living-learning centers will make up the Xerox Center for International Training and Management near Leesburg, Va. The \$55 million school will, in its initial phase, have accommodations for 1000 students in five centers; it will have a staff of 500. Each center will consist of 34 suites housing 200 students. Classrooms and laboratories will be located in adjoining wings. Basic structure of the housing buildings will be reinforced concrete; educational units will be steel with ribbed-faced concrete block. Roof's will be natural clay tile. Only 40 acres of the 2265-acre

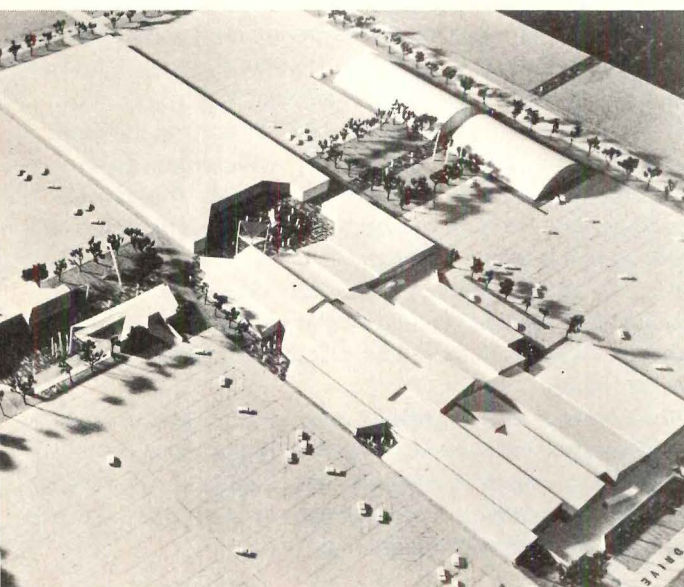




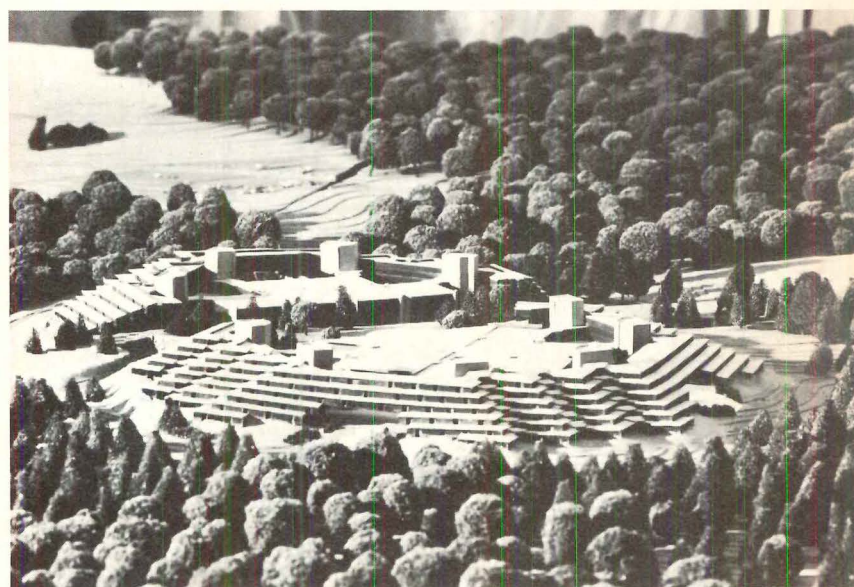
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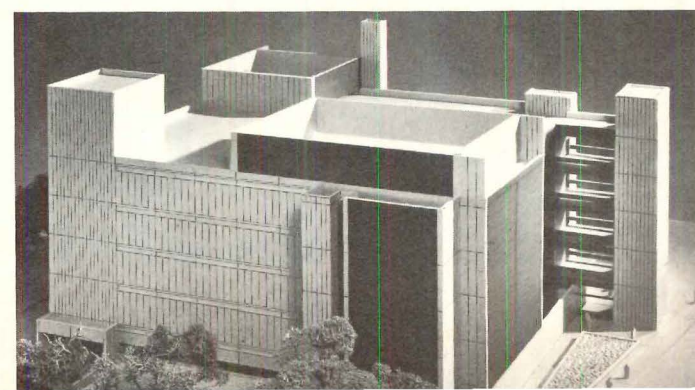
5

site will be for the two groups of buildings (three living-learning centers will be in one complex, two in another). Design, planning, engineering and interior design is being done by the Kling Partnership.

**6 High-rise high school** was solution picked by Edward J. Tedesco Associates, Inc. to challenges of a tight urban site and an existing school that couldn't be disturbed. Main elements are the academic tower and a low-rise wing housing auditorium and physical education facilities linked by a unit that houses locker and shower rooms. The 10-story tower will be divided into two houses separated by a media center on the sixth floor. Each house will have its own laboratories and dining spaces. Escalators will be used to move the 2000 students from floor to floor; the house arrangement above and below the media center will help reduce the length of trips. Elevators and stairs will also be provided for emergencies and other special purposes. The steel frame structure will have a precast concrete exterior.

**7 Communications center** for Long Lines Department of AT&T in Worcester, Mass. will house more equipment than people, allowing an essentially windowless building. Designed by SMS Architects, the building will have a precast concrete and anodized aluminum (for mechanical areas) exterior; structural system is reinforced concrete. Initially to be five-stories high, the building will be designed for the addition of three more stories plus a possible eight-story addition.

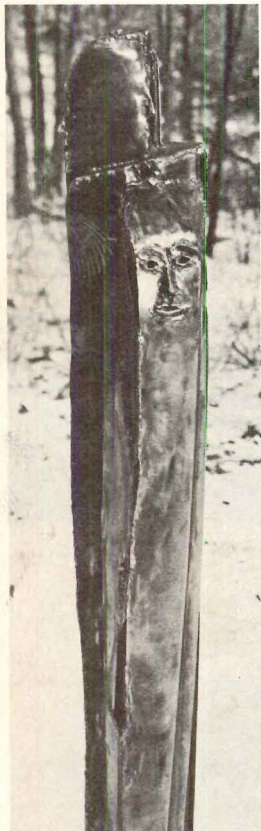
6







NCHP's Rock Creek Terrace



Sculptures, masks



Baldwin Hills Village

To keep out soot and air pollution, each of the six greenhouses has its own steam fed heating and ventilating units; instead of the traditional system of ridges and side vents, the greenhouses are ventilated by power driven intake and exhaust fans. About 6000 sq ft are under glass (plastic).

#### NCHP: loss is gain

At the end of its first full year of operation, the National Corporation for Housing Partnerships noted in its recently released annual report, the Partnership had 14,500 units of assisted housing, representing 78 projects in 27 states, on its action list. That "may be the largest single performance for assisted housing production made during 1971 by an organization offering the range of development and financial services such as NCHP provides," according to the report.

What NCHP does is provide seed money and join in partnerships to get housing projects, particularly troublesome projects without the hope of government guarantees. In 1971, \$1.2 million of seed money went into housing projects as loans during the early stages of development; once projects were declared feasible by federal or state agencies, joint venture or partnership agreements followed. The first project NCHP had a hand in was Rock Creek Terrace, on the outskirts of Washington, D.C. NCHP was a 50 percent partner, a cash outlay of nearly \$400,000, from the start. The garden apartment portion is fully rented, as are the apartments in the tower, which is nearly finished.

In 1972, NCHP expects to have \$24 million available for equity investment with local partners in low-income housing projects. The total number of projects is expected to be twice the 1971 figure.

For investors, NCHP presents a situation in which loss is gain. Return to investors is in the form of tax losses, a total of \$2,632,000 giving each investor a loss equal to almost 25 percent of his invested cash. The losses are used by investors to offset taxable income from other sources.

#### Sculptor leads New York street procession

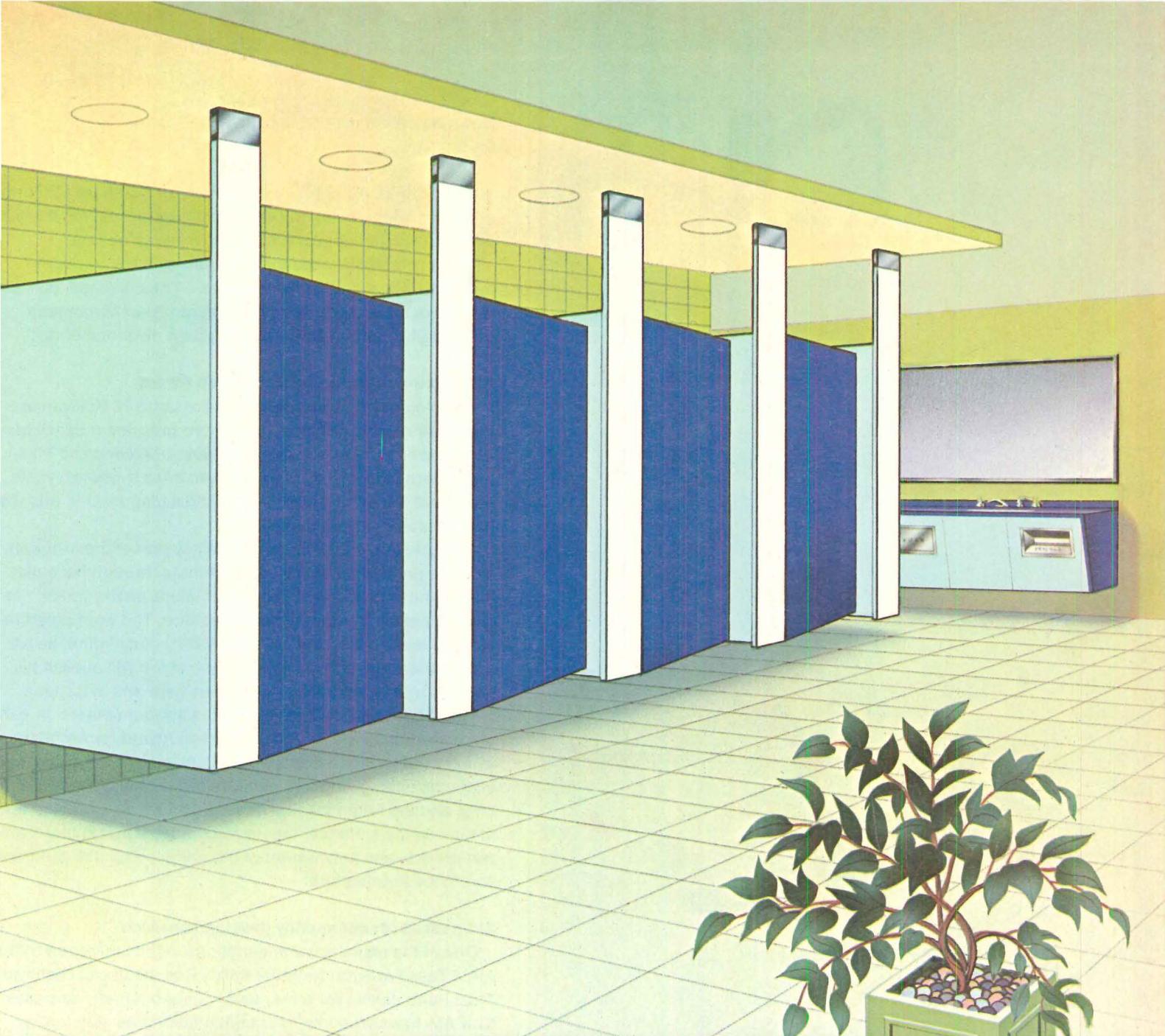
Pedestrians on New York City's Lexington Avenue were treated to what sculptor Suzanne Benton calls The Second Coming of the Great Goddess—a procession of metal mask and ritual sculpture done by Ms. Benton—on May 16. The procession will move from Bloomingdale's ("the housewives' mecca," according to the sculptor) to Caravan House Gallery. Many of the sculptures are masks and torsos, and were worn by those taking part in the procession; at the gallery, many of the masks and ritual objects may be handled.

#### AIA's third 25 year award goes to L.A. development

The Los Angeles residential development of Baldwin Hills Village, which was completed in 1942, received the third Twenty-five Year Award given by the AIA. The project was designed by Reginald D. Johnson/Wilson, Merrill & Alexander, with Clarence S. Stein as consulting architect.

The development was labeled "one of the handful of projects that stands out as a fundamental advance in both planning and architecture," by Lewis Mumford. It preceded many of the design and planning notions claimed for today's environmentally conscious projects: almost a fourth of the 64-acre site is devoted to open space; a landscaped "village green" is at the center and the buildings are surrounded by





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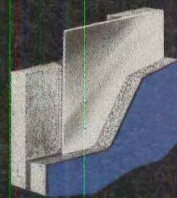
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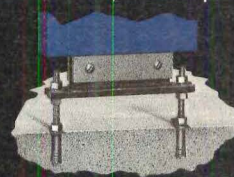
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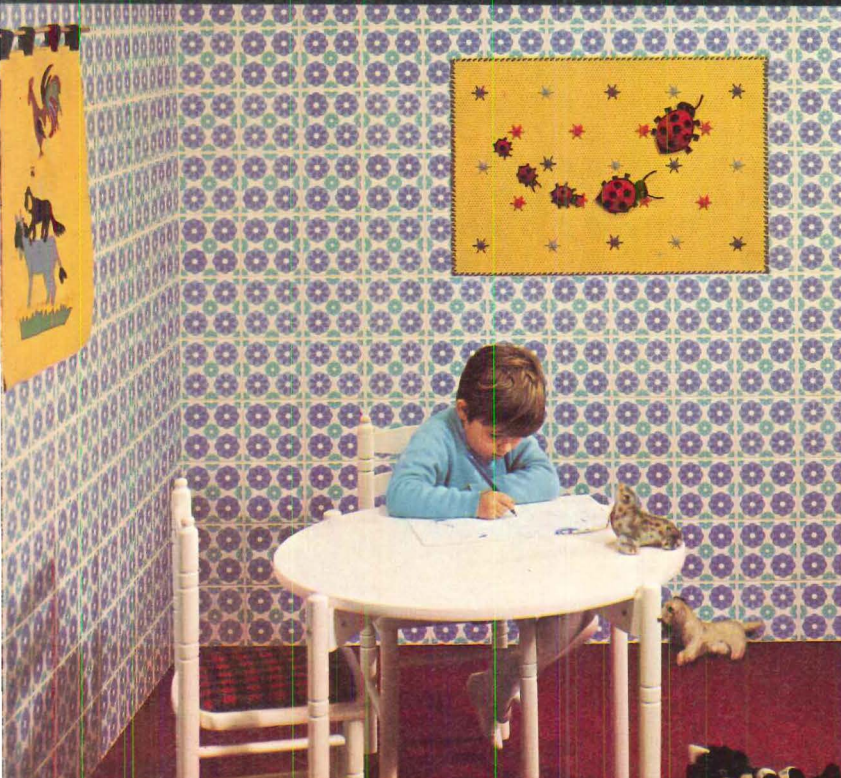
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News report continued from page 32

garden courts. Automobiles, important in Southern California are taken into account but do not dominate the plan; there is plenty of convenient parking but no through streets.

The jury citation noted that the buildings are "straight-forward, unpretentious, serviceable." The buildings, plus the plan, give the project "A clarity, a serenity, a harmonious unity rarely found in 20th Century urban developments."

### AIA and union set up Louis Sullivan Award

The ideals and accomplishments of Louis H. Sullivan are the guiding lights behind a new award program recently announced by the AIA and the Bricklayers, Masons and Plasterers' International Union. To be given once every two years, the award will carry a \$5000 prize and a plaque; U.S. and Canadian architects are eligible.

As expected, use of masonry is a key part of the program, as is the architect's ability "to contribute through his buildings to the improvement of our man-made environment," to quote from the announcement brochure. The winning architect will receive his award at the BM&PU convention; he will also address the convention, and the union will publish his address and distribute it to architects here and in Canada.

There is a historical footnote to the announcement: in 1970 the union set up the Thomas Jefferson Award for Architecture which went to Ulrich Franzen. The University of Virginia, however, has been giving a Thomas Jefferson Medal for some time, and the union felt that its award might be confused with the university's. Hence, the name change which makes Franzen the first and only winner of the union's Thomas Jefferson Award for Architecture.

### AIA pushes for community development fund

One of the major recommendations in the first report of the AIA's Task Force on National Policy was the use of Highway Trust Fund dollars for other, community-oriented, purposes. Now AIA has carried the recommendation one step further, with Task Force chairman Archibald Rogers telling a Congressional Subcommittee that a community development fund, replacing the Highway Trust Fund, would be "a funding source at the federal level that would not only be multimodal in the transportation sense, but would be available to provide the public infrastructure of all kinds necessary to sustain a high quality of urban and rural life."

The fund, as Rogers outlined it to the House Public Works subcommittee on roads, would have four key characteristics. It would create and repair the public infrastructure—roads, sewers, water mains, power and utility lines—that guides development; it would provide money for planning and construction to state and metropolitan governments; it would be flexible, letting local governments set their own priorities; and it would strongly support local planning and development agencies. The money would come, Rogers said, from "quasi-user sources, such as the gasoline taxes" and a whole new "array of revenue sources one might collectively call 'development fees.'"

### BRAB Committee studies Breakthrough criteria

Some time this fall, a special study committee set up by the Building Research Advisory Board will report to HUD on its



udy of HUD's guide criteria for Operation Breakthrough. The criteria were set up to guide the development and evaluation of housing systems produced under the program; they included quality control provisions and left open the possibility of some sort of HUD certification. The BRAB committee is looking into the impact that the criteria might have on the building industry if they find use beyond Operation Breakthrough.

Behind the study is some real concern that the criteria could have an adverse impact on the building industry if they are picked up by local code groups and made into law, which has reportedly happened in one or two cases. One problem pointed out by building associations is that the criteria tend to raise the quality, and therefore the cost, of housing, putting the builder in a less competitive position. Another area of concern has been the basic nature of the guide criteria: performance specifications can be loosely interpreted in some cases, causing a problem for the building codes people. BRAB's committee will try to pin down these and other areas of concern and conflict by meeting with industry groups that have complained to HUD. Costs, complication of regulatory procedures and the possible need for quality control and evaluation and certification programs if the criteria find widespread use will be looked at closely.

#### Big doings in New York City

East side, west side, midtown and down, construction plans in New York City have taken a turn for the larger in recent months. To start with there is the New York City Convention-Exhibition Center, planned for the Hudson River shore between 44 and 47 Sts. It will be the country's largest convention center, according to the developers, providing over 1,000,000 sq ft of exhibit space and costing an estimated \$160 million. Architects for the project are Skidmore, Owings & Merrill, with Gordon Bunshaft and J. Walter Severinghaus in charge of the job.

But far bigger than that is the mammoth undertaking planned for lower Manhattan by the city's Office of Lower Manhattan Development, one of the horizontal agencies that Mayor Lindsay introduced to the city government. Reported to be the largest single redevelopment project in the U.S. funded by private money, the project will cover 110 acres along the East River from the Manhattan Bridge to the Staten Island Ferry Terminal. Total cost is put at about \$1.2 billion. Announced in mid-March, the proposal that went to the city planning commission in May included 15 separate items to be built on new land over the East River. Starting at the northern end of the project area (near the Manhattan Bridge) the proposal includes an 8-acre public park, a 500-boat marina, a 1,000-room hotel, a sports complex, commercial retail space, an oceanarium, the South Street Seaport Museum (including renovation of a block of row houses known as Schermerhorn Row and the construction of new buildings), 2500 units of housing over a 1000-car city garage, the New York Stock Exchange (the exchange leased the site from the city two years ago and hopes to announce construction plans within a year), 4 million sq ft of office space (no plans yet, but expected within the next five years), 3500 units of housing, the conversion of a park into the East River, another 3500 units of housing, and a feasibility study for a multiuse complex at the Staten Island Ferry Terminal.

(continued on page 41)



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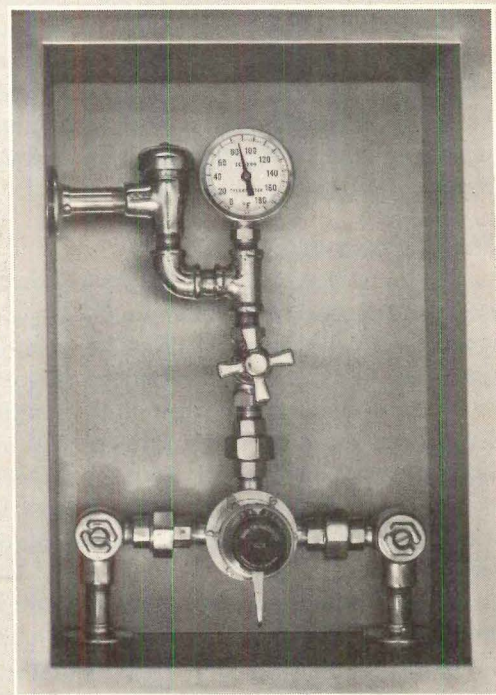
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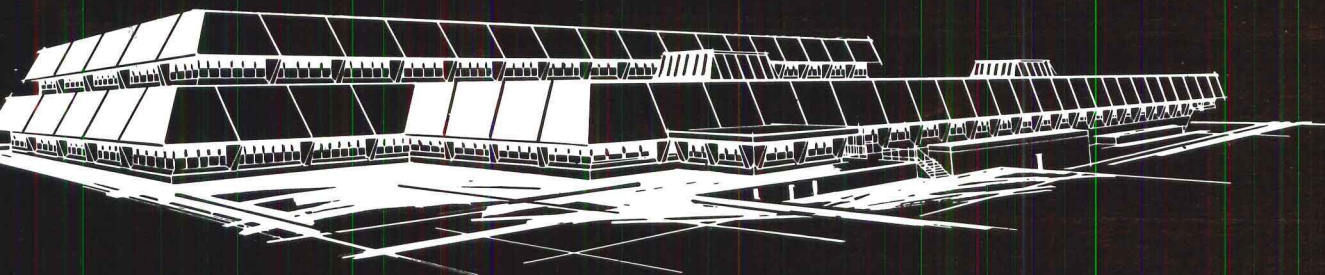
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The area is ideal for redevelopment, says Richard Weinstein, director of the Office of Lower Manhattan Development. "It has a work force, no slums and good subways, and it gives us an opportunity to house 100,000 people in spectacular planned communities." The key to doing that, of course, is in the proposed housing and commercial facilities. The two go hand-in-hand: store owners and restaurateurs don't want to locate where there are no residents, and residential developers don't want to move into areas where there are no services for their tenants.

The housing is aimed at middle-income tenants, says Weinstein; the developers are shooting for \$115-\$120 per room, which he says is possible with the lower interest rates and other financial strategies being explored. The almost 10,000 units of housing would be the city's largest privately financed new housing. Low-cost, low-income housing was ruled out by the high cost of building in the river: \$40 per sq ft.

The big question is obvious: will it really happen? The baldly honest answer is that it is still a plan right now, but Weinstein feels it is quite likely to get built. The signs, he says, are good. Developers who tend to hold back on announcements until everything is set have made their announcements; David Rockefeller, a quite circumspect person, joined Mayor Lindsay in announcing the project and the initial response from the financial community has been encouraging. If everything goes well, pile driving rigs could show up in the East River in 12 to 18 months (piles were chosen over landfill because piles can be depreciated while landfill can't).

#### Exhibit firm builds structures for Transpo '72

A set of modular structures is being built by a Philadelphia designer and producer of exhibits for Transpo '72, the international transportation exposition planned for Dulles Airport. General Exhibits, Inc. is doing the building, under a \$384,000 contract, and will lease the structures to the exposition.

Three different sizes of modules will be produced; joined together, they will form four long rambling buildings. The buildings will all be 42 ft wide, but lengths will vary from 337 ft to 759 ft. The Transpo '72 headquarters structure, Volpe Center, will be a three-story version.

The modules are based on rhombic shaped panels that are ringed together to form a variety of modules. They are factory fabricated sandwiches of fiberglass and urethane foam insulation. When Transpo is over, the structures will be dismantled and available for other uses.

#### Mobile homes more mobile when high winds blow

In a strong wind, the mobile home becomes more mobile than anyone might want, suggests a report by the American Insurance Association. High velocity winds can tip or even blow about unanchored mobile homes, resulting in property damage, injuries and deaths, the Association warns.

The Association, which has developed recommendations for tie-down or anchored systems, was alerted to the problem by Hurricane Celia in 1970. Association engineer Garry Watson, testifying to the New York Joint Legislative Committee on Housing and Urban Development, which is studying a building code for mobile homes, noted that Celia damaged 85 per-

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*It comes in 30 solid colors and*  
*36 semi-transparents.*  
*That's the beauty of it.*



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For samples on wood, write on your letterhead Box 5433 Seattle, Wa. 98107 Olympic Stain. A division of COMERCO, INC.

Architect:  
Frederick K. Heim





**Katzenbach and Warren** wall coverings include everything from roller-printed wallpaper to exquisite woven textures from the Orient. It is the only authorized maker of Williamsburg® Wallpaper Reproductions—each representing in color and design a faithful reproduction of original antique documents in the Williamsburg Collection. **Contact** Bernard Salembier, New York (212) 759-5410

**Moreddi** offers imported and domestic avant-garde furniture. Particularly noteworthy is the exciting Artemide collection of Italian fiberglass chairs, tables and lamps—a line that can add distinctive contemporary elegance wherever it's used. **Contact** Ed Frank, Ridgefield, N. J. (201) 941-0220

**Bloomcraft** markets an extensive line of beautifully styled fabrics, bedspreads, decorative pillows, draperies, case-ments and imported sheers of fine quality at surprisingly modest prices. An excellent source for those special touches that can set your overall scheme apart. **Contact** Lewis Bloom, New York (212) 683-8900

**Selig** is a major manufacturer of classic contemporary upholstered furniture and a leading importer of contemporary metal and glass furniture. Newly added are important lines of chrome and glass Italian imports, including chairs, tables, étagères and SleepAway convertible sofas. **Contact** Bob Wexler, Leominster, Mass. (617) 537-9111

**Raymor/Richards, Morgenthau** brings together for you the largest collection of decorative accessories available anywhere: specialty furniture, all types of temporary accessories, lamps, wall decoration, sculpture, clocks, art; and craft-related products of wood, metals, ceramics and crystal. **Contact** Everett Winters, Ridgefield, N. J. (201) 941-0220



**Living Room Division** features sofas and chairs which emphasize simplicity of design and excellence of workmanship, in the highest standards of traditional and transitional styling. Many with exclusive Beautyrest Comfortorc construction. **Contact** Todd Colvin, LaGrange, Illinois (312) 352-9110

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pany. Our International Division can help coordinate selective delivery for installation anywhere. Go Simmons all the way.





**Simmons Contract** is a world leader in furnishings for the health care, innkeeping and educational fields. In addition to its own lines of institutional furnishings—beds, bedding, chairs, Hide-A-Bed sofas, office furniture, case goods and carpeting—Simmons Contract offers the products of all other Simmons partner companies for a fully coordinated design and furnishings capability. **Contact** Bob Costello, Chicago (312) 644-4060

**Hausted** offers the health care field a full line of specialized patient handling and transporting equipment, including the Tractionaid unit and Inval-Aid chair, and continues to lead the world in the development of coronary and intensive care units. **Contact** Art Murphey, Medina, Ohio (216) 722-1515

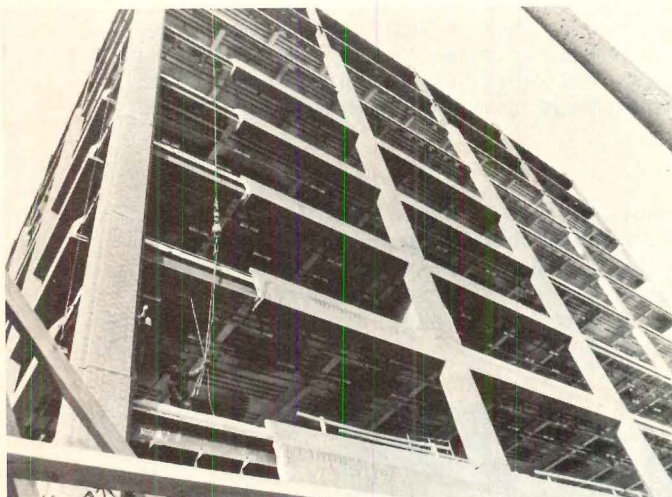
**Thonet** occupies a unique position in wood and metal furniture for public use. Its chairs, tables and sofas are featured in schools, colleges, health care institutions, offices and restaurants. From its traditional bentwood to classic and contemporary metal, wood and upholstered seating, to case goods, to the custom designing of built-ins, Thonet offers a superb balance of beautiful styling and durable design. **Contact** Joe Quarles, New York (212) 725-1100

**Greeff** offers prestige lines with fashion authority. A leading supplier of imported and domestic fabrics—in both traditional and contemporary designs—for draperies and upholstery. Other important lines include coordinated wall coverings, carpeting, area rugs and exclusive Beautyrest Masterpiece bedding. The E.C. Carter Division distributes an exquisite collection of curtains, sheers and casements. **Contact** Ted Greeff, Port Chester, N.Y. (914) 939-6200.

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Contoured brick panels



Air rights school and apartments

cent of the 9000 mobile homes in 40 trailer parks around Corpus Christi, Tex. Close to 4500 of the damaged homes were total losses.

The problem, Watson said, is not limited to hurricanes or to the areas where they are expected, and as more and more mobile homes are used as housing—temporary or permanent—the need for tie-downs becomes greater. The Association recommends an engineered support and anchorage system; the report gives performance criteria for the complete package—the unit, the support and anchorage system, as well as tie-down methods for units without built-in support and anchorage systems.

#### Contoured brick panels hung on Philadelphia building

Redevelopment projects along Philadelphia's Independence Mall are closely watched to see that the historic character of the neighborhood is not spoiled by new construction. Brick is a favored material, and on an 11-story building for the Philadelphia National Bank, architects Ewing Cole Erdman & Eubank use brick panels as if they were precast concrete.

The panels, 9 ft long and 5 ft high, are contoured to wrap part way around horizontal steel spandrels. Only 4 in. thick, the panels require no concrete block back-up; the reduced weight accounts for some \$100,000 in structural steel savings. Further savings, to the tune of \$60,000, come from the fire resistance of the panels, which does away with the need for additional fireproofing.

The panel sections are hoisted by crane and hung from the angled top of the spandrel beam by seven oversize bricks. Once in place, they are bolted to the base of the beam. Bricks are bonded with an epoxy base mortar.

#### New York's first school/apartment project completed

Last September, PS 126 in the Bronx opened its doors to students; this spring tenants began moving into Highbridge House, a 400-unit apartment tower on the same site, marking the completion of the first combined school and housing project of the New York City Educational Construction Fund. The Fund has 23 similar projects under way.

The \$10 million tower and the \$4 million school were designed by Brown Guenther Battaglia so that each structure has separate entrances on different levels. Original plans called for the tower to rise directly over the school, but the architects discovered that while that would have taken up less of the sloping 4-acre site, it would have been more expensive. Heavier columns and girders would have been needed, along with more mechanical services and a less efficient use of school space.

The final solution put the buildings side by side, giving a more efficient double-loaded corridor arrangement, along with some open plan classrooms, a cafeteria, a gymnasium/auditorium and outdoor play space—the garage roof is a playground. Revenue from the lease of air rights to the apartment building meets debt service on the school.

#### Courses for architecture students crossing department lines

Interdepartmental and interdisciplinary courses are no longer really novel ideas in the academic world, but new ones that come along are still interesting. In architectural schools they indicate that some students, at least, are being prepared for the changes that are going to reshape the profession.

[continued on page 48]



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NEW IDEAS

TO LIGHT



Dreamy ideas to blend  
form and function...into economical  
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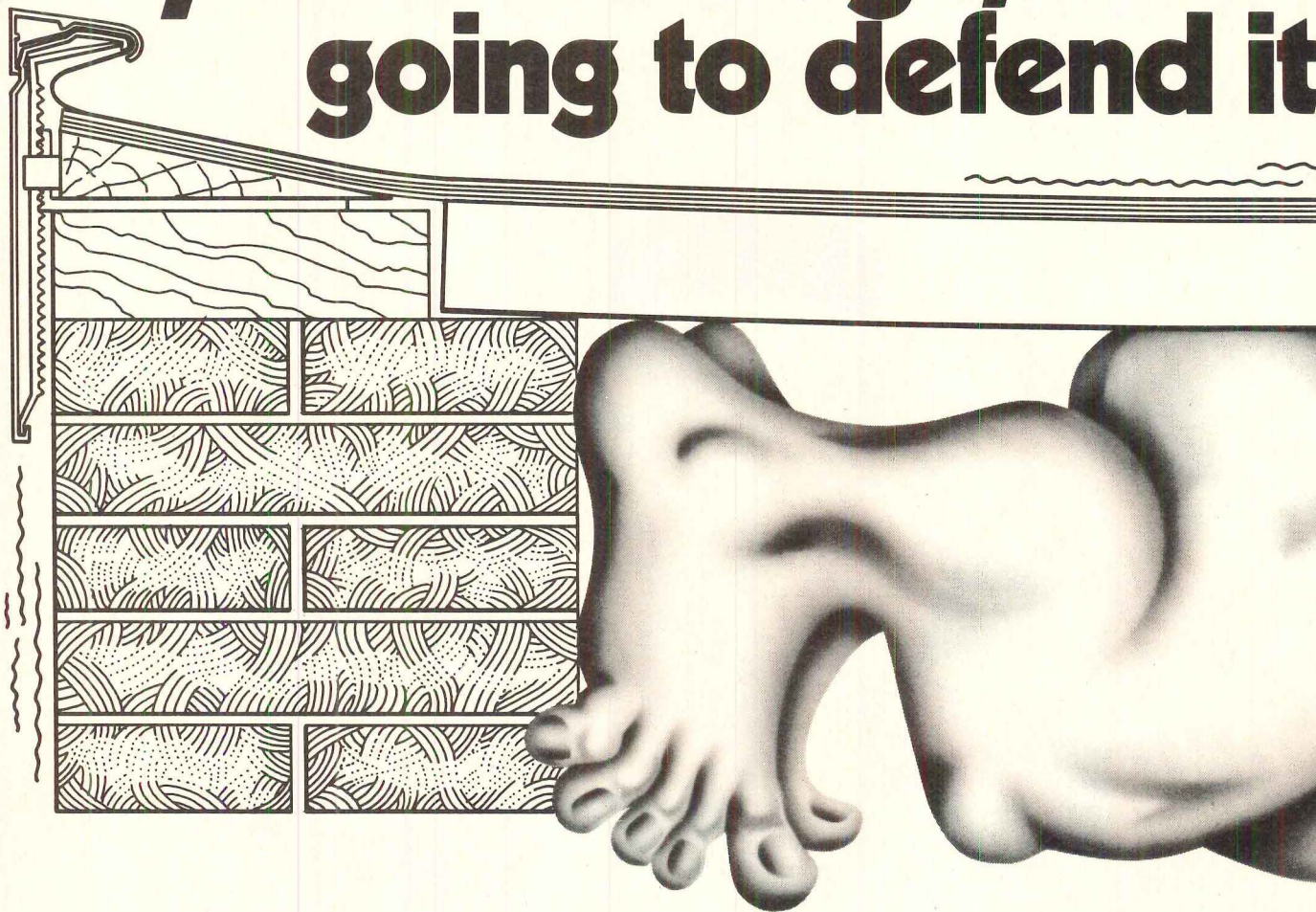
Style, grace, color and distinction—all in one efficient package. They're here. This is attractive low or high-wattage HID lighting to design with . . . rather than around.

For aesthetics, shielding and experienced lighting control, ask your General Electric representative about the new Decafloods\*, Decaglows\*, Spaceglows\*, or Powerglows®. Or write GE Lighting Systems, Hendersonville, N. C. 28739.

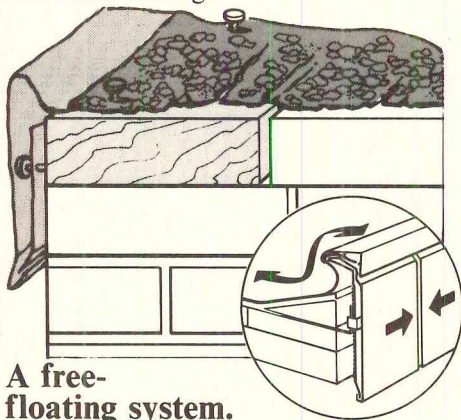
460-65



# When movement attacks your roof edge, what's going to defend it?



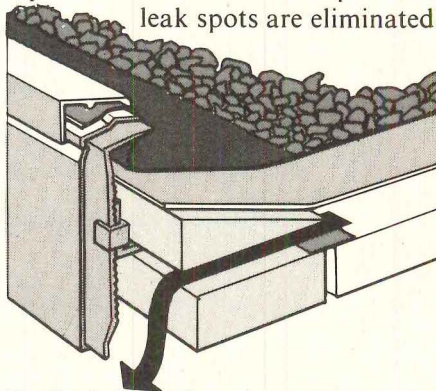
Everybody knows you can't stop the attack. For wherever you find two adjoining structural planes, you'll also find movement. Movement in different directions, at different rates, that makes nails pop, nail holes enlarge, joints open, etc. Any of which can cause leakage.



## A free-floating system.

But now there's a beautiful defense against movement: Tremline, a unique free-floating fascia system that takes movement in stride like no other roof edging system can.

For other systems are static and have very little give. But the components in Tremline are free to move independently, without exerting strain on each other. So Tremline can absorb movement between the roof and wall. And keep absorbing it for years and years. There are no exposed fasteners so these potential leak spots are eliminated.



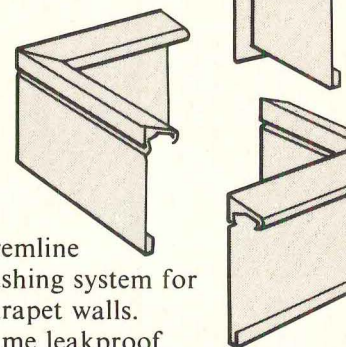
## Built-in venting, too.

Tremline also allows perimeter venting of the roof insulation. Other edgings provide only partial venting, if any. And with the neoprene mem-

brane in position, you have a broken weatherproof seal around entire building edge. The membrane also acts as an expansion joint which absorbs roof movement.

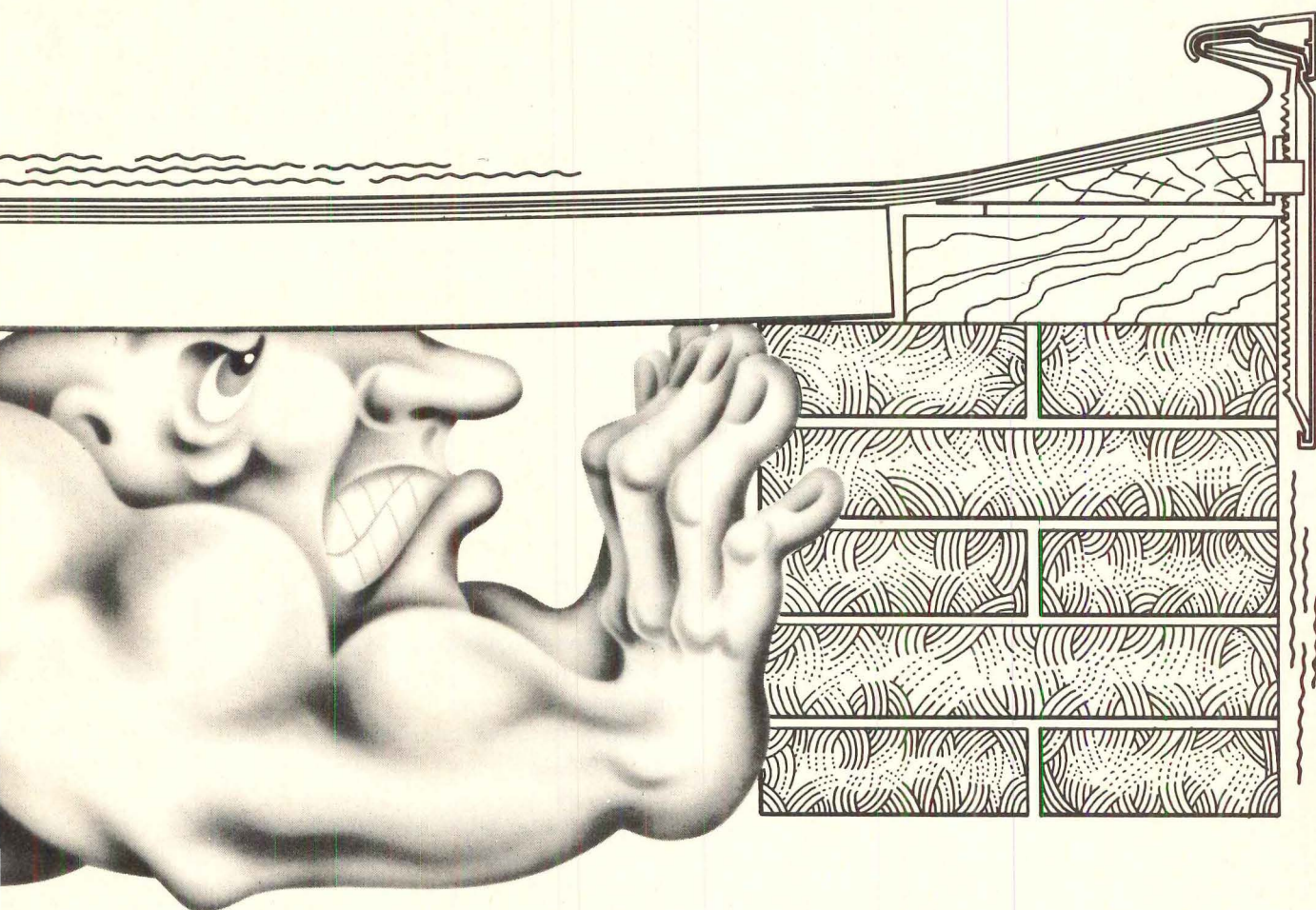
## A complete modular system.

Tremline is also versatile and adaptable. With its modular design, it can easily be installed on concrete, lightweight concrete and steel decks. And there's also a



Tremline flashing system for parapet walls. Same leakproof security, same easy installation.





And with Tremline, you get the complete system, from one responsible supplier. All necessary components are preassembled to meet conditions at corners, ends and transition points. So there's little to be mailed on drawings or fabricated for the job. Fascia is packaged in 15' lengths, 6" or 8" facings.

**Architecturally beautiful.**  
Tremline is uniquely beautiful, too.

Gives a clean-line appearance to the roof edge. The extruded aluminum fascia comes in mill, anodized or custom-painted finishes, with slip joints every 15 feet. No ugly exposed fasteners. No oil canning.

Your contractor will appreciate another beautiful feature: its easy installation. It snaps together and self-locks, adjusts up or down in 1/16" increments. Which also makes for easy alignment and compensates

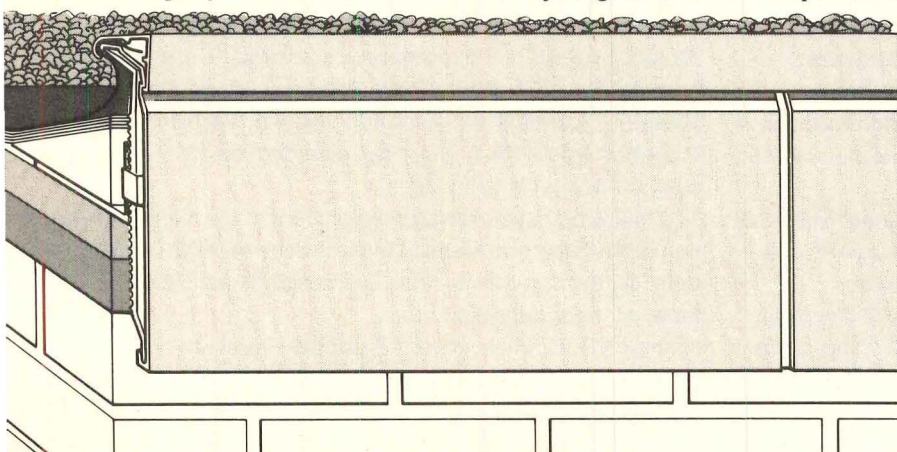
for most roof irregularities.

The Tremline/Alwitra Edging System is a patented product that has been proven in performance for more than seven years. It meets insurance wind requirements and is approved by Factory Mutual System. For more details, see your Tremco man.

And if you have any caulking, glazing or waterproofing problems, he can help too. For over 40 years, our business has been solving these problems and providing top-quality leak proof systems and products, such as our job-proven sealants MONO, DYmeric and Lasto-Meric, and liquid polymer Tremproof waterproofing. The Tremco Manufacturing Company, Cleveland, O. 44104, Toronto 17, Ont.

**TREMLINE/ALWITRA EDGING SYSTEMS FROM:**

**TREMCO**  
**The water stoppers**





Take the course recently introduced at Pratt Institute's architecture school. The teachers are a site engineer, an architect and planner, a landscape architect and an ecologist, and the title is "Ecology and Land Development." For the first-year students, developmental planning, environmental protection, landscape architecture and site engineering are handled separately; later in the course the way they come together in an integrated system, coordinating an area's physical development with its ecological requirements, is covered. Jerzy Glowczewski, who is teaching physical planning, developed the course.

Meanwhile, over at the City College of New York, the school of architecture and environmental studies has added a complete program in urban landscape architecture, under the direction of M. Paul Friedberg. It focuses primarily on the solution of urban open space problems; the urban resources of New York City will be used to the fullest extent, according to Friedberg.

Upstate at Syracuse University, students in the school of architecture are taking a course with students in the school of education. The course, directed by Robert Bogdan of the school's special education and rehabilitation division will have as its main goal the design of a home for 20 mentally retarded adults. The students in special education will act as the clients, the architecture students as architects; two actual sites were chosen for the building to keep designs realistic and in accord with local zoning and building codes.

#### A little more help for rural housing

Ten rural low-income housing development organizations got some help with front end and development costs with the first batch of loans made by the Housing Assistance Council. Set up last year, and funded by the Office of Economic Opportunity, HAC started out with a \$2 million revolving fund for loans.

The first loans add up to \$647,476, which according to executive director Gordon Cavanaugh, "will enable local organizations to produce over a thousand dwellings for the rural poor under a variety of federal subsidy programs." Loan recipients range from groups planning to build 150 units of farm labor housing to a program to use youth corps labor to put up sectional houses.

#### Awards

Three architectural firms received awards in the 1972 Bartlett Awards program recognizing accessibility to the physically handicapped: Skidmore, Owings & Merrill (Weyerhaeuser Headquarters, Tacoma, Wash.); C.F. Murphy Associates (McCormick Place-on-the-Lake, Chicago) and Ulrich Franzen & Associates with Mackie & Kamrath as associate architects (Alley Theater, Houston).

Richard Meier received the 1972 Arnold W. Brunner Memorial Prize in Architecture given by the National Institute of Arts and Letters and the American Academy of Arts and Letters. The National Academy of Design gave its highest architectural honor, the Samuel F.B. Morse Medal to Vincent G. Kling & Partners for the Armstrong Cork Co., Styling and Design Center, Lancaster, Pa. (P/A, June 1971, p. 58). Honor and merit awards were given to designers of Southern

Baptist buildings at the Ninth Triennial Architects Workshop of the Southern Baptist Sunday School Board. Honor awards went to Grigg, Brown & Williams Architects (Heritage Baptist Church, Annapolis, Md.); Stiles & Jarrard Architects (Student Center, Arkansas Tech.) and Ellis, Ingram & Parris (Azalea City Baptist Church, Valdosta, Ga.). Merit awards were given to J.E. Serrine Co. (First Baptist Church, Greenville, S.C.); McGehee, Nicholson Associates (Glen Park Baptist Church, Memphis, Tenn.); Gilleland-Wallace & Associates (Vestavia Hills Baptist Church, Birmingham, Ala.); Edward Reames & Associates (Christian Life Center, Dauphin Way Baptist Church, Mobile, Ala.); Betz, Carey & Wright (Bellevue First Baptist Church, Bellevue, Ky.); L. Frank Caldwell (Mt. Olive Lutheran Church, Newton, N.C.) and Albert O. Ordway (parish church for Church of the Holy Spirit, Atlanta, Ga.).

#### Personalities

Peter S. Hopf has been named chairman of the office practice committee of the New York State Association of Architects.

Francis D. Lethbridge, FAIA, of Keyes, Lethbridge & Condon, Washington, D.C., has been named chairman of the AIA Foundation. David N. Yerkes, FAIA, of David N. Yerkes and Associates, Washington, D.C., has been named chairman of the AIA Octagon House Committee.

Ilmar Reinvald has been named head of the School of Architecture at Montana State University, Bozeman.

Ambrose M. Richardson has been named chairman of the Department of Architecture at the University of Notre Dame, South Bend, Ind.

David A. Crane will become dean and Alan Y. Taniguchi, director, of Rice University's School of Architecture for the next academic year.

Ada Louise Huxtable, New York Times architecture critic, was presented an award by the Greater New York Chapter of the National Women's Division of Albert Einstein College of Medicine for her role in making us aware of our architectural heritage.

Morgan Stedman, Palo Alto, Calif. architect, has been given an award certificate by the Santa Clara Valley Chapter of the AIA. Steele Barnett, of the Boise Cascade Corporation, Boise, Id., has been elected president of the American Institute of Timber Construction.

Frank L. Whitney, president of Walter Kidde Constructors, Inc., New York City, has been elected to the board of directors of the Building Research Institute.

Edward Cohen has been elected president, and Chester P. Siess, vice president of the American Concrete Institute, Detroit, Mich. Arthur R. Anderson and Fritz Leonhardt have been made honorary members in the Institute.

Five alumni have received the Distinguished Engineering Alumnus Award of the University of Colorado College of Engineering: Edwin R. Whitehead, Robert D. Isaak, Charles A. Blessing, Arthur S. Horner and the late E. Vernon Konkell. Clarence Rosa, FAIA, has been awarded the 1972 Michigan Society of Architects Gold Medal.

The following have been elected officers of the National Association of Architectural Metal Manufacturers: W. Ray Crabb, president; W. Benton Lewis, first vice president; and Myrel F. Wallace, Jr., secretary-treasurer.

Nicholas H. Holmes, Jr. and Arthur G. Tafel, Jr. have been appointed to the General Services Administration Region 4 Public Advisory Panel on Architecture. John M. Walton, AIA, has been [continued on page 55]



# THONET HOT SEAT

Virtually indestructible, flame-retardant furniture . . . a hot new idea from Thonet. Lounge chair, settee, sofa and tables as durable as they are handsome. Resist scratches and stains from most common solvents. Made of super-strong "Kydene," an acrylic-PVC alloy from Rohm and Haas.

Thermo Orange. Red Hot. White Heat. Torch Black.

Get 'em while they're hot. Thonet Center of Design.

New York. Chicago. Los Angeles. San Francisco.

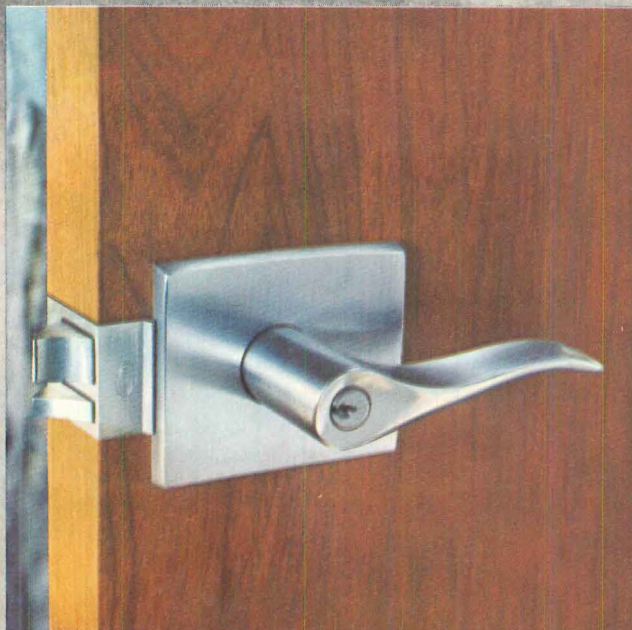
Dallas. Miami. Or write Thonet Industries, Inc.,

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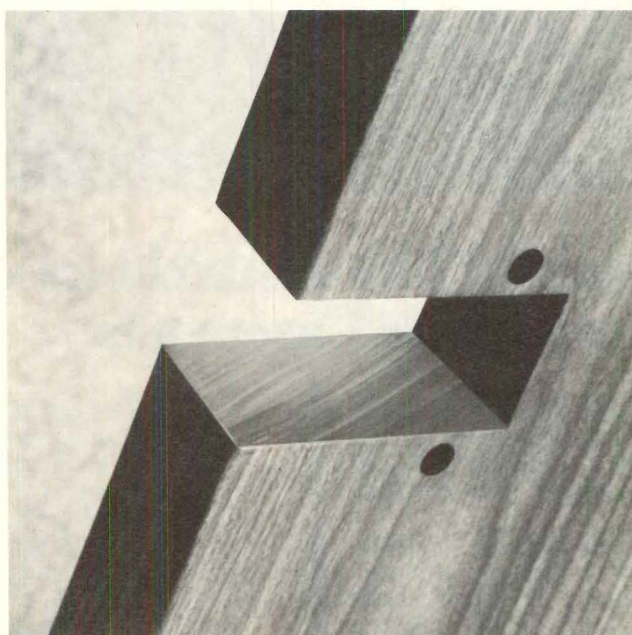
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CENTER OF DESIGN







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**The Security Analysts.**





## Glass or gold panels? It's tenants' choice with Andersen Perma-Shield® Casements.

The ease with which the sash of Andersen Perma-Shield® casements can be removed and replaced *from inside* inspired an interesting architectural feature in this professional office building in Louisville, Kentucky.

One third of the openings are glazed with 1-inch Mirawall insulated panels in a yellow gold color. The other two thirds have Andersen's standard welded insulating glass. So each tenant can arrange the glass/panel combination to fit his needs for privacy, aesthetics, and so on.

The arrangement is easily changed to new tenant's needs. It is therefore a random but could be ordered if desired.

Important to the architect was the fact the installed price of the Andersen casement about equal to that of aluminum alternatives lacked many features offered by Perma-Shield.

And, as always, the minimum maintenance required by Perma-Shield was a leading factor in their selection.

Andersen features, plus an architect's



**INNOVATION IN DESIGN.** One of a series created for DAP Architectural Sealants. Design and rendering by Richard P. Howard Associates, Architectural Illustrators, Sylvania, Ohio. Harold R. Roe, A.I.A.

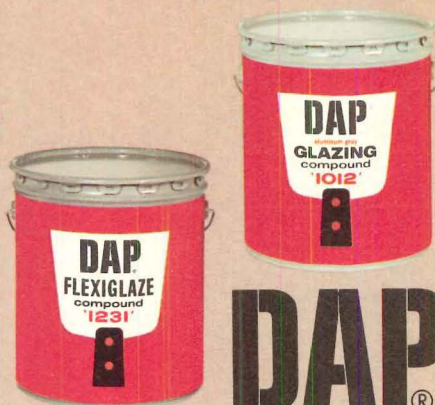
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**DESIGN CONCEPT.** Dramatic two and one-half story, clear glass diamonds form high fashion display windows in this shopping center plan. Dark grey interior glass scheme provides backdrop for merchandise displays, yet admits light to second floor.



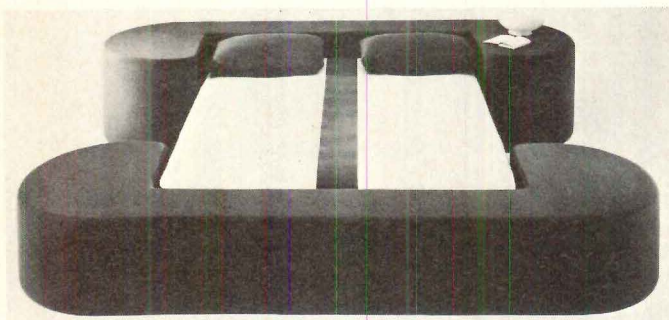
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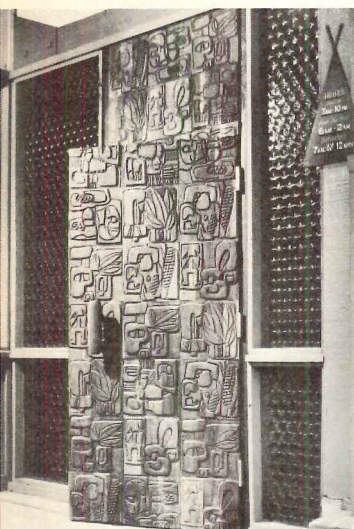




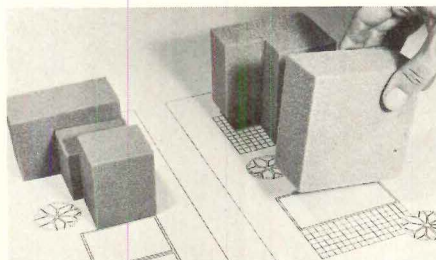
## Products and literature



Environ for sleep



Custom doors

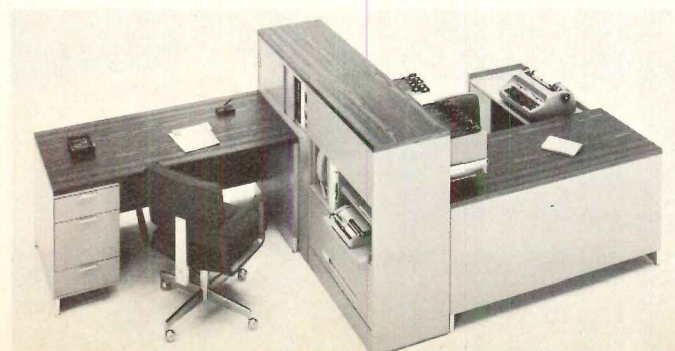


Sculpturfoam



Rugs from Turkey

Expandables



**Environ for sleep.** Standard single beds can be upholstered in fabric or leather, are complete with covered mattress and pillow. The double bed design has separate head and footboards strong enough to sit on. Made of cut foam of varying densities for both strength and comfort. Stendig Inc.

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**Custom doors.** Carved by western and Spanish-American craftsmen, these doors are available in any size or wood desired, with carved designs in any period or style. Group of authentic Spanish designs comes in samonilla wood with a dark walnut finish. Architectural Specialties, Inc.

*Circle 102 on reader service card*

**Air conditioners for mobile homes.** Two air conditioning units have been designed for mobile homes; single unit offering a self-contained cooling coil, condenser and compressor which mounts under the floor and connects to existing ductwork of the heating system is available in 30,000 Btu and 36,000 Btu. The remote system has cooling coil and blower in one package for mounting under the floor; a condensing unit is outside, adjacent to the home. Friedrich Refrigerators.

*Circle 103 on reader service card*

**Shag carpet.** Suitable for residential use and such light commercial installations as executive offices, meeting rooms, apartments and hotel/motel guest rooms, this shag carpet includes tri-level dyes and pebble point textures. Tufted with heat-set nylon, carpets are FHA certified and meet federal flammability standards. Burke Carpet Mills.

*Circle 104 on reader service card*

**Sculpturfoam.** For preliminary mass studies, this foam is described as strong yet lightweight, easily cut, shaped and carved to provide various masses. Particularly useful during initial development stage for site planning, foam will not crumble or break apart, is nontoxic and self-extinguishing (a noncombustible foam is also available). It accepts metallized coatings, paints and stains; glues and epoxies provide firm adhesion to all surfaces. Ray Draper Associates.

*Circle 105 on reader service card*

**Rugs from Turkey.** This collection of flat woven rugs called "Kilim" comes from local Turkish bazaars and villages. Handwoven of natural dyed wool, most pieces date back to the early part of this century and represent the diversified heritage of the native weavers in design, color and craftsmanship. Arts of Turkey.

*Circle 106 on reader service card*

**Expandables.** Modular workstations with sectional steel desks and files are designed for more effective use of space. The lateral file sections permit reference from both sides; workstations are described as self-contained with everything needed arranged within arm's reach—writing surface, machine space, organizers, storage and communications facilities. Workstations can be used alone, aligned in grid patterns, staggered or clustered, offering any degree of privacy or openness. Available in 18 colors with plastic laminate tops. Shaw-Walker.

*Circle 107 on reader service card*

[continued on page 66]





Building: Newburg North Professional Park, Louisville, Kentucky.  
Architect: Robert F. Crump, Louisville, Kentucky.



ination, have once again resulted in a handsome, distinctive building with high tenant appeal.

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# Another vintage year

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appointed a member of the Panel for Region 3.

**George W. DeFranceaux** has been elected chairman of the board of directors and chief executive officer of the National Corporation for Housing Partnerships. **George M. Brady, Jr.** was elected president and chief operating officer of the Washington, D.C. based operation.

## Calendar

**June 6-9.** International Switching Symposium, Massachusetts Institute of Technology, Cambridge.

**June 10-14.** Fourteenth congress of the Panamerican Federation of Architects Association, Sao Paulo, Brazil. Meeting will reconvene in Asuncion, Paraguay, **June 14-18.**

**June 12-14.** Seminar on managing new building projects sponsored by Advanced Management Research International, Inc., Delmonico's, New York, N.Y.

**June 17-22.** 1972 International Design Conference, Aspen, Colo.

**June 19-21.** Sixteenth annual convention and exhibit of the Construction Specifications Institute, Minneapolis.

**June 19-21.** Seminar on management strategies sponsored by Advanced Management Research International, Inc., the Miyako, San Francisco.

**June 19-22.** Sixty-fifth annual meeting and exposition, Air Pollution Control Association, Hotel Fontainebleau, Miami Beach, Fla.

**June 21-23.** Fourth National Exposition of Contract Interior Furnishings, the Merchandise Mart, Chicago.

**June 25-28.** Seventy-second annual meeting of the American Society of Landscape Architects, Sheraton Hotel, Philadelphia.

**June 26-30.** Systems Building and Industrialization in the United States, Massachusetts Institute of Technology, Cambridge.

**June 30.** Deadline for letters of intent to enter Energy Conservation Award Program sponsored by Owens-Corning Fiberglas Corporation, Toledo, Ohio.

**July 3-20.** Athens Ekistics Month, Athens Technological Organization, Athens, Greece.

**July 11-15.** Annual meeting of the National Society of Professional Engineers, Brown Palace Hotel, Denver, Colo.

**July 31-Aug. 1.** Managing new building projects sponsored by Advanced Management Research International, Inc., the Stanford Court, San Francisco.

**Aug. 6-9.** Seventh annual conference of the Society for College and University Planning, Sheraton-Biltmore Hotel, Atlanta, Ga.

**Aug. 9-10.** Outdoor lighting conference for landscape planners, sponsored by General Electric Lighting Institute, Nela Park, Cleveland, Ohio.

**Aug. 10-11.** Architectonics '72 Exposition, Oakland Auditorium, Oakland, Calif., preview for building design and construction team professionals and officials. (Aug. 12 the exposition is open to general public.)

**Aug. 21-26.** International Conference on Tall Buildings, Lehigh University, Bethlehem, Pa.

**Aug. 26-28.** Northwest regional conference and meeting of student council of the American Institute of Interior Designers, Seattle, Wash.

**Aug. 29-Sept. 1.** Twenty-first annual northwest regional conference, Alaska Chapter AIA, Anchorage Westward Hotel, Anchorage.

**Aug. 31.** Deadline for all entries to Energy Conservation Award

Program sponsored by Owens-Corning Fiberglas Corporation, Toledo, Ohio.

**Sept. 25-30.** Eleventh World Congress of the International Union of Architects, Varna, Bulgaria.

## Washington report

### Summer topic: construction costs

Evidence of revived interest in building technology as a means of holding down costs is worth noting, as Washington enters an important summer season. That interest—which has declined notably since the boost it was given by HUD's "Operation Breakthrough" more than a year ago—can be picked up from a number of developments.

For architects and structural engineers, perhaps, the most important development is a study now being conducted by the General Accounting Office (at Congressional behest) of costs of building health facilities. West Virginia's Senator Jennings Randolph, head of the Senate Public Works Committee, reminded Congressmen that spending on such facilities now exceeds \$3 billion a year, will go up to \$5 billion a year by 1980. "But Health-Education-Welfare department studies show that the average cost per bed in constructing a hospital has increased from about \$25,000 in 1963 to about \$48,000 in 1971. "In the same period," said Randolph, "the average cost per square foot has doubled—from about \$25 to about \$50 today."

Randolph commented that he thought "significant savings" could be effected through "the use of innovative methods, design improvements and less restrictive standards." He also pointed to lengthy delays in obtaining approval of plans (in order to obtain federal money under the Hill-Burton Act and other federal legislation), as well as costs of providing other hospital services and facilities.

In the same week, GAO reported that time required for planning a highway ranged from 2.5 to 14 years—an average of 8.7 years. "This was attributed," said a GAO statement, "to federal requirements, and approval of state actions at each stage of the planning process."

But there were other facets of the renewed attack on costs, and methods of gaining acceptance of new techniques. The Senate housing subcommittee, for example, began hearings in mid-May on separate legislation (S. 3373) which would make it illegal (obviously for unions) to block the use of new building technology and prefabricated products through restrictive work practices. The bill, authored by Tennessee's Senator Bill Brock, originally offered on the floor as an amendment to the Senate's major housing legislation (S. 3248), was offered separately by agreement with Senate leadership, which wanted to get the major bill passed (it had not yet been considered by the House). The aim, among other things, is at court actions such as the "Philadelphia door" case a couple of years ago.

The President, following the dictates of legislation passed more than a year ago, proclaimed the establishment of a "National Center for Housing Management," intended to be a nongovernmental institution (appointed by the HUD Secretary and the President) to "provide objective and independent leadership . . . in helping meet the nation's needs for housing management and training." Specifically, the new "center"

[continued on page 59]



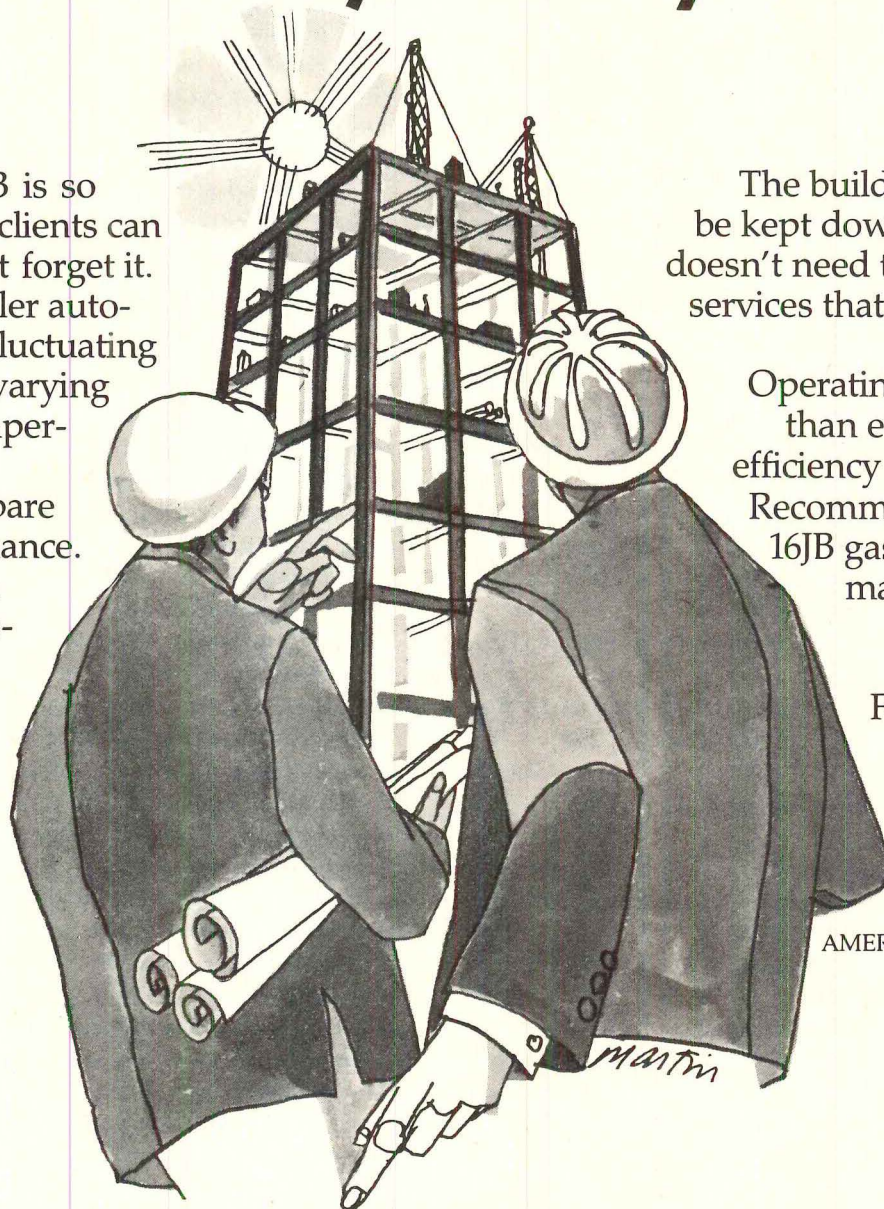
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will develop training and educational programs for housing management and personnel; cooperate with national and local-level training and educational institutions; aid in recruiting and placement activities; develop "improved" management practices; stimulate creation of new management entities.

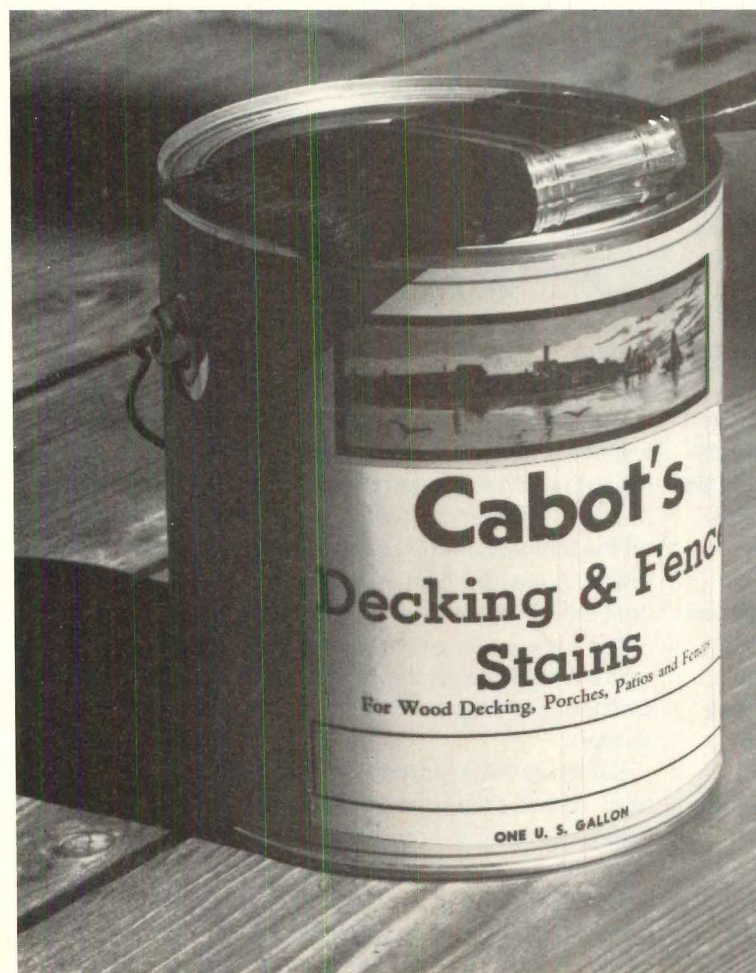
The center is a sort of a quarter-step toward the proposed "National Institute of Building Sciences" (S. 1589), which has rested in committee pigeon-holes for almost a year now. As proposed in that legislation, the "Institute" would also be authorized to carry on training programs for management personnel, and would add the duty of "encouraging changes" in local laws that may impede use of newer construction techniques and encouraging advances in building science.

Other related developments in the Capital include the serious drive by contractors, spearheaded by new Associated General Contractors' president James McClary, to "regain control" of the construction site—which McClary contends has been lost by a combination of contractor spinelessness and government and court actions. Another was the announcement of a new employer group, the Council of Construction Employers, to represent management in solving national problems; it "will speak with one voice in dealing with labor and government." The eight original members (others are expected to join as soon as their boards can take action) include AGC, National Electrical Contractors Association, sheet metal and air conditioning groups, roofing contractors

and others. Head of the group is Harry Taylor, recently head of the Philadelphia Builders chapter of AGC and an alternate member of CISC. Closely allied to these objectives was a three-day Washington meeting of construction employers, in which members of some 15 major contractor groups got together, devoting most of their time to discussing how they could regain control of the construction site.

On the periphery were other actions that will have an effect both on costs and on the location of work. One of these was Senate passage of the "Rural Development Act" (S. 3462) which would set up about \$500 million for use in planning and construction of rural public works, in the hope that by making rural life more attractive—and attracting more industry to rural areas—some solution could be developed for the continuing heavy migration to urban centers.

There were other sidelights. A House-Senate conference had reached an impasse, as April ended, over plans for the costly (\$45 million) proposed extension of the Capitol's West Front. The House wanted to go ahead with the plan, the Senate balked. Contractors protested loudly over Price Commission rulings that, in effect, mean they must "eat" any wage-fringe raises exceeding 5.5 percent granted to workmen; they can't pass along any more than that in the form of higher prices to customers. The builders argued that on one hand they are forced to pay wage raises averaging 6.7 percent by decisions of the Construction Industry Stabilization Committee, but on the other hand are restricted by the Price Commission in passing along the cost. They weren't getting too far with the argument, as summer started. [E.E. Halmos]



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## Architecture west

Wallace, McHarg, Roberts and Todd's \$1.3 billion new plan for downtown Los Angeles carries forward much of the earlier thinking of the City Planning Department. But "Central City Los Angeles: 1972/1990" offers a brilliant solution for binding together the new financial district to the west and the Convention Center and proposed trade center on the southwest edge.

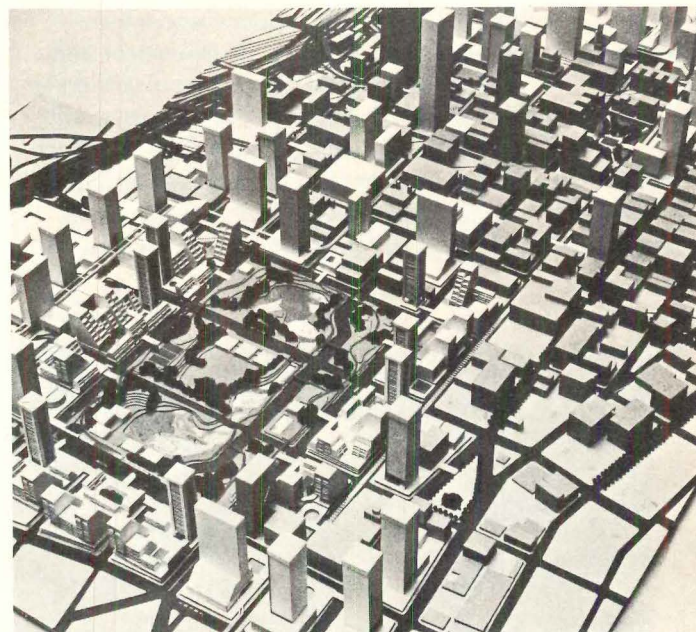
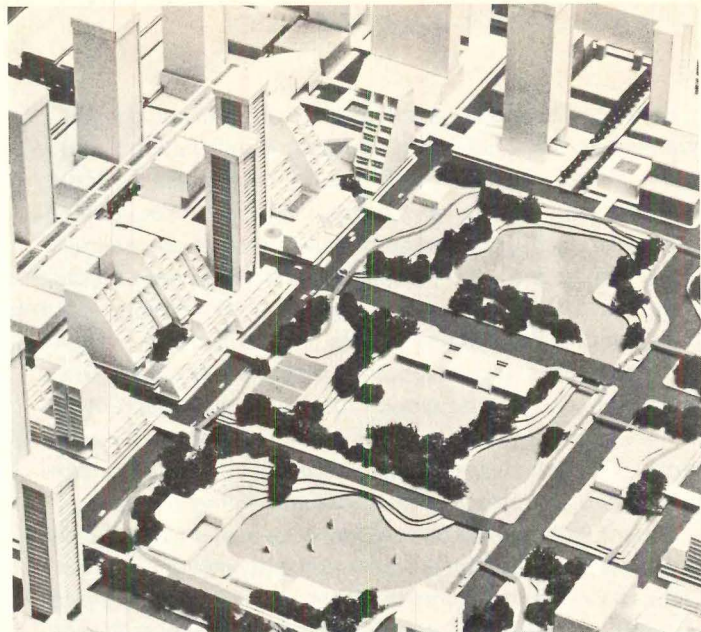
The cement is a 50-acre urban park with a lake, surrounded by one-block-deep terrace housing, commercial space and restaurants. The site of South Park, as it is called, is now mainly filled with parking lots and low structures, with only three tall buildings—old and undistinguished. Thirty additional acres originally included in South Park were detached because the greater number of tall buildings might delay acquisition. One of several first priorities of the plan, the park should qualify under Title VII for New-Town-in-Town front-end costs.

The plan comes out of a decision by a group of downtown interests to participate in the planning of an area in which its stakes were high. The 26-member Committee for Central City Planning, Inc., raised \$250,000 for studies and plans; the city matched that figure.

The open space of South Park is not clear gain. As in Reuben Louvret's 1969 staff working paper for the City Planning Department (P/A, Mar. 1970, p. 35) the Central Library and park are usurped by office towers, and Pershing Square is a three-decker sandwich of parking, concrete plaza and pedestrian walkway. WMRT outdoes the previous plan, which called for an initial four miles of elevated malls, by spreading a network of second level walkways throughout the city core; moreover, many connect to elevated moving sidewalks.

The moving sidewalk has had a fascination for previous Los Angeles planners. Mel Scott, in his 1942 "Cities are for People," foresaw for 1960 expressways to the airport with traffic moving at 60 mph and moving sidewalks from parking to leviathans crossing the continent nonstop in eight hours. Carl B. Troedsson's 1957 "The City, the Automobile and Man" proposed bridges over streets, enabling shoppers to go from one superblock (eight square blocks) to the next on slow-moving sidewalks or electric cars.

How to keep the sidewalks from being rolled up at night (static or dynamic) remains a priority because there's gold under them—in utilities—and the tax burden is borne by too



few. How to bring back a middle class to share the burden was the starting point a generation ago for the Bunker Hill walk-to-work high-rental residential towers, with other housing extending to Sunset Blvd. on the north and the Central Library on the south. After the Victorian mansions were cleared off the eminence—the one topographical amenity in downtown L.A.—a new plan called for truncating it. The few towers built did not achieve the desired ends.

The only housing specified in the first priority action areas of the WMRT plan is the small amount around the lake. Phase One looks to drop-ins rather than sleep-ins to spread the tax burden.

But today the suburban dweller whose mortgage is amortized, whose property taxes have skyrocketed and whose family has dwindled could be won back to a renewed central city—if there were a rapid transit system. WMRT's flying carpet into 1990 sees it in full operation; as it is the key to the success of any plan we hope the forecast is as conservative as the dream of 60 mph freeways by 1960. [Esther McCoy]



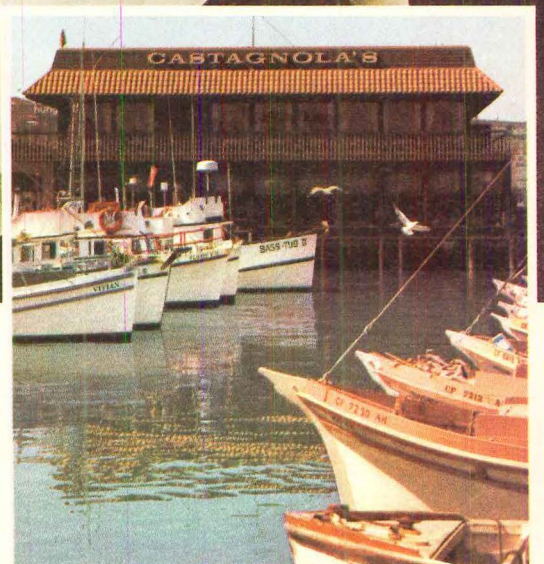


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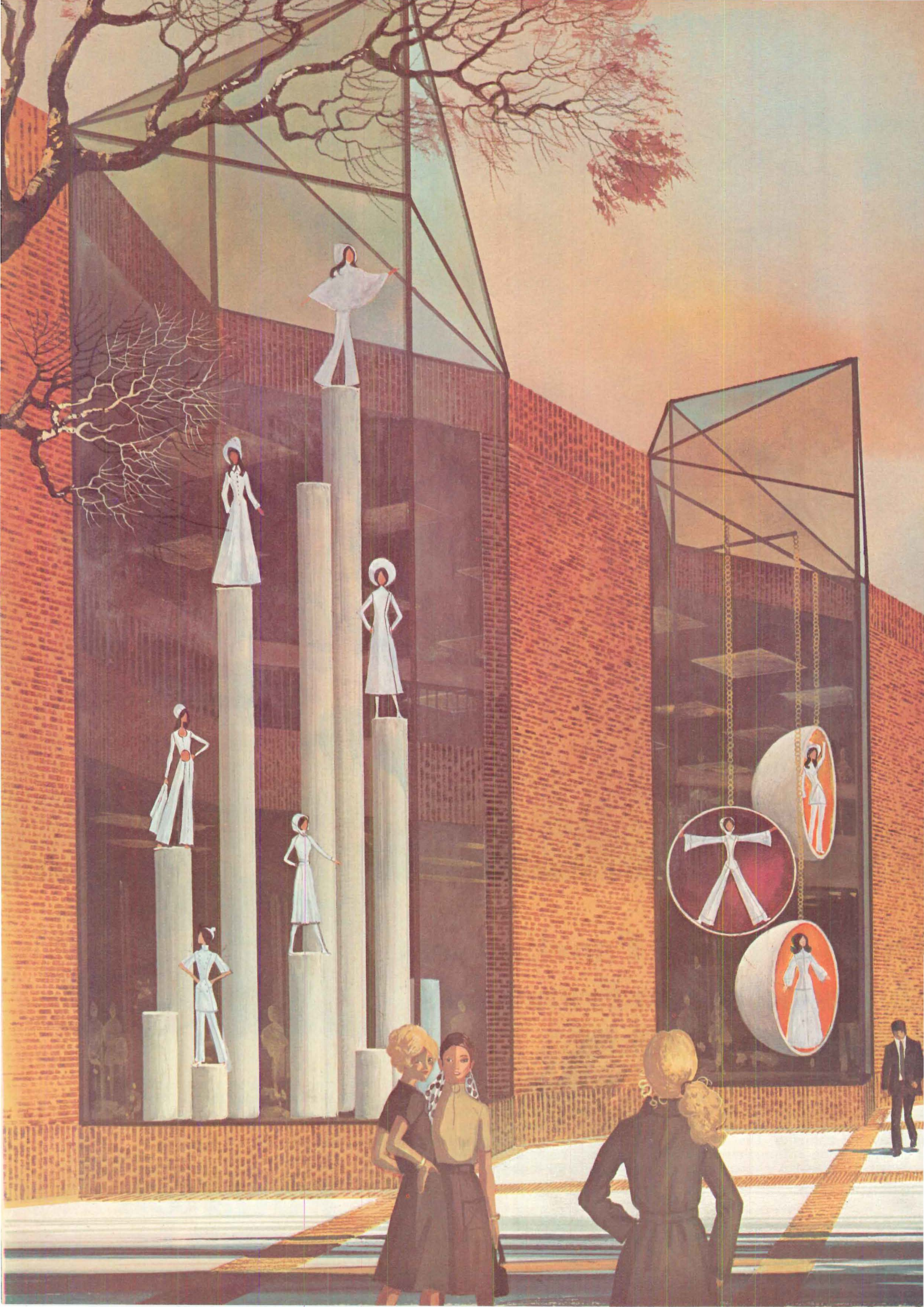
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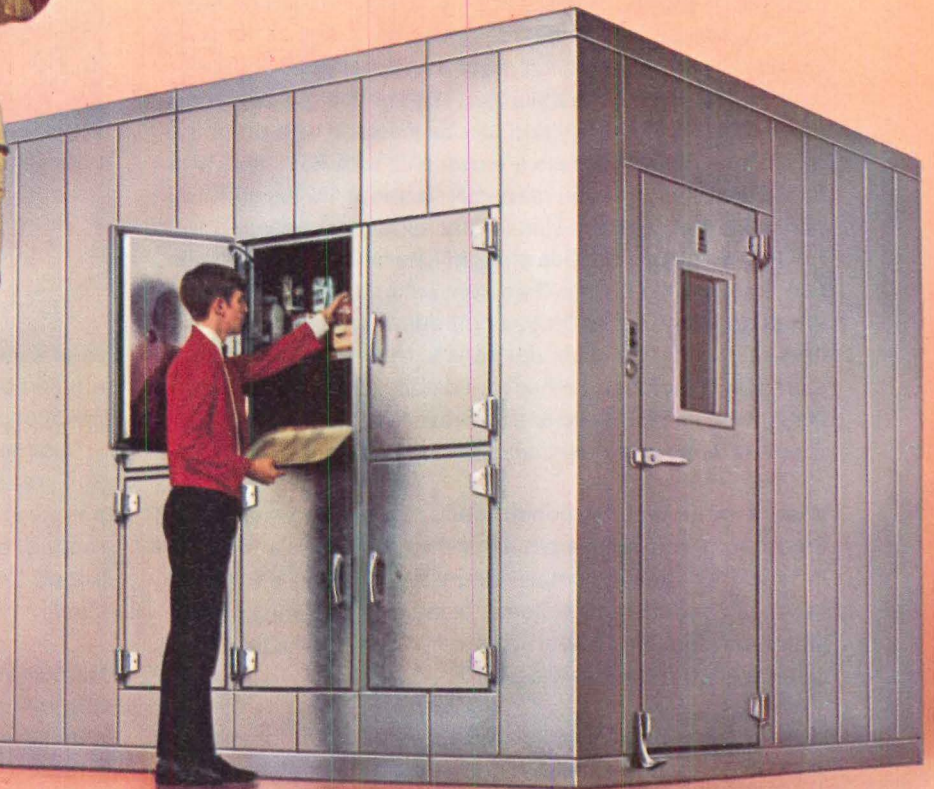






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**Library furniture.** Designed to complement the design of contemporary libraries and to take hard wear, this furniture is made of all-hardwood solids and veneers—northern hardrock maple, black walnut and northern oak. Leg attachment uses concealed bars bolted together to provide a metal-to-metal attachment said to be uniquely strong and stable. Hand rubbed finishes. Myrtle Desk Co.

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## Literature

**Domes and arches of Plexiglas.** Pointing up Plexiglas' ability to bring natural light indoors, this booklet features its use in domes and arches in such applications as a botanical garden's "Climatron," an aquarium's amphitheater and a rooftop year-round pool. Also available is "Plexiglas in Architecture," brochure giving design principles, properties and characteristics as well as glazing specifications and installation procedures. Rohm and Haas Co.

*Circle 109 on reader service card*

**Laminated copper building panels.** Twenty-page booklet describes a system of laminated panel construction using high quality rolled copper which requires neither special equipment nor framing for installation. The lightweight components are said to handle easily and can be installed with ordinary hand tools. Veneer panels are available with  $\frac{3}{8}$ -in. and  $\frac{3}{4}$ -in. substrates, which weigh respectively about  $1\frac{1}{4}$  lbs and 3 lbs per sq ft. Panels offer a visually flat surface; the easily applied roll formed seams provide straight true lines at panel joints. Costs are said to be less than conventional sheet metal construction. Booklet describes components giving detail drawings of structural and veneer panels, transverse seams, mansard, fascia, soffit and other roof details. Guide specifications also given. Revere Copper and Brass Inc.

*Circle 110 on reader service card*

**Woods for multifamily construction.** Six projects depicted in 35 color photographs are built of western woods and include in-town high density rentals, luxury townhouses, adult and prestige condominiums. Some, using modular units, were sided with western lumber. Western Wood Products.

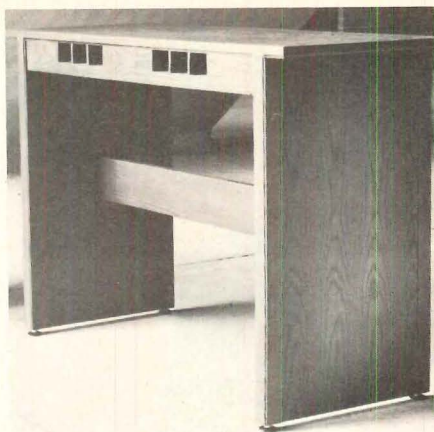
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**Indoor/outdoor.** "A Child's World of Adventure," the title of this brochure, describes this company's line of play equipment including their educator-approved playforms geared to preschool and kindergarten programs. Special features, dimensions and costs of each playform are discussed. Playground Corporation of America.

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**Like Spanish tile.** Installation information and specification data on aluminum tile that looks like Spanish tile is given in this brochure. Tile is reportedly applicable to any structure without reinforcement and at lower cost than clay tile. Roofing Systems, Inc.

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Library furniture



Domes and arches of Plexiglas

**Roof waterproofing.** Recently released technical data points up the advantages of Nervastral 600, an elastic roof flashing made of polyvinyl chloride resin alloyed with other elastomeric substances. It can be stretched and shaped, flexes freely at 20 F, resists alkali and acid, mildew, fungi and bacteria. Paper gives specifics on roof expansion joints and other basic roofing requirements. Bulletin 139 G. Rubber & Plastics Compound Co. Inc.

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**Hardwood flooring.** A variety of floors are shown in this brochure—oak plank floors with beveled edges and walnut pegs glued over countersunk screws; strip floors, including pre-finished flooring for remodeling; block floors, both solid hardwood strips and laminated blocks; Monticello flooring with mitered pickets around wood blocks. Finishes range from light to medium to extra dark, some antique finishes too. E.L. Bruce Co.

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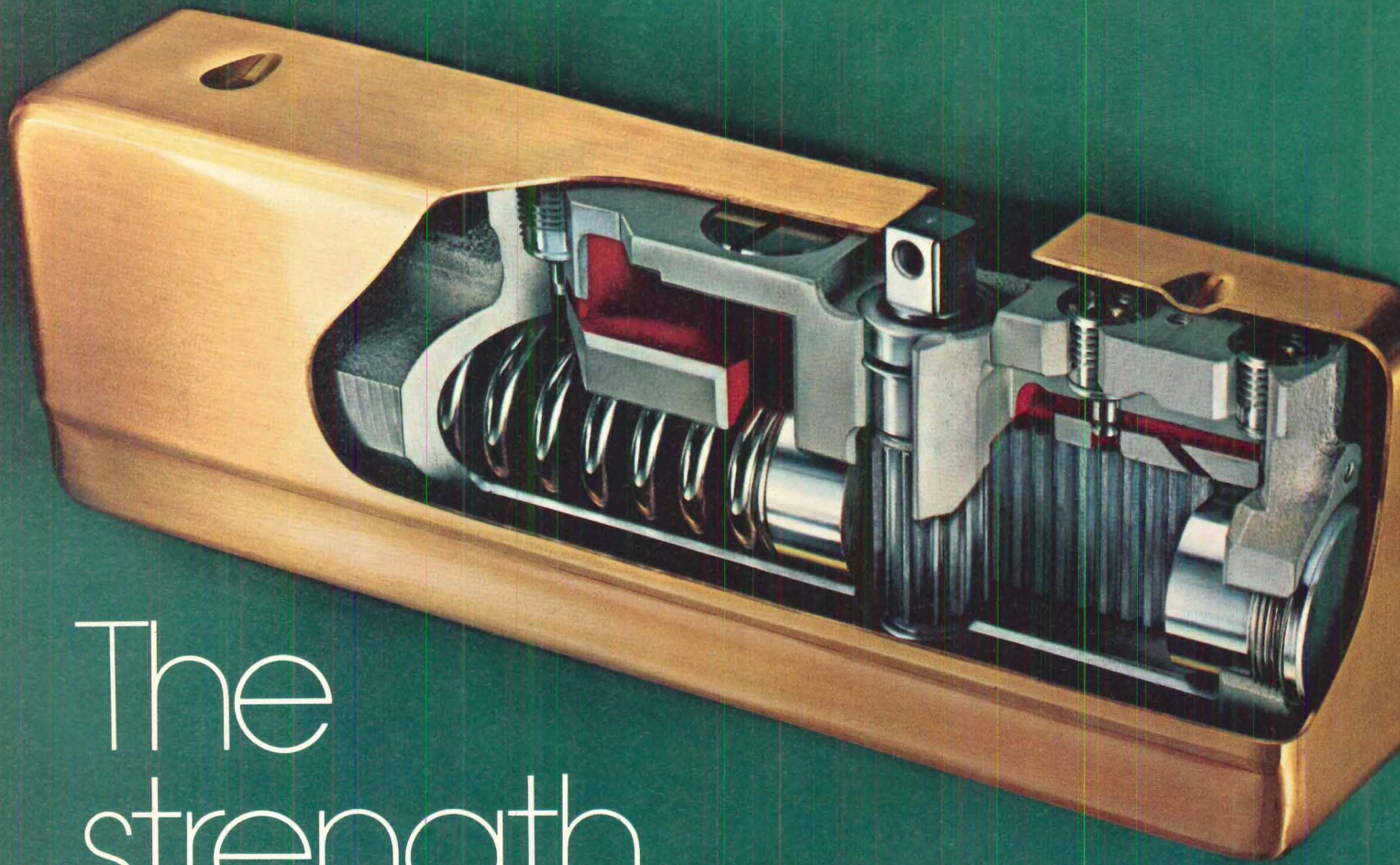
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# Progressive Architecture

June 1972

**Everything was simpler in the old days.** At least it always seems so. The "old days" for me are the years around 1960, when I first joined P/A as an assistant editor. Looking back, it seems as if the architectural journals had a relatively simple task in those days: just to parade the latest triumphs of Modern Architecture before an eager audience. Professional life was not yet cluttered with questions of conservation, community participation, computer printouts, or construction management. Somehow, whether fondly or bitterly, we tend to recall the early 1960s this way.

When we refer to actual documents of the period, it turns out that the situation was not so simple. P/A for February 1960, the month I arrived here, had a major story on I.M. Pei's design for Place Ville Marie, Montreal, by feature editor (later to be editor) Jan C. Rowan, in which he talked not just about building forms, but rather about the interaction of entrepreneurs, architects, city agencies, land owners, and tenants-to-be to produce a commendable scheme. He did, in fact, question the impact of such a development on the city and warned that public investment will be essential to prevent paralyzing congestion. In short, he treated both the process and the social ramifications. So much for those recollections of 1960 as the year of form making for form's sake.

To find architecture as a really untrammelled art, we have to look much further into the past. If we go back an arbitrary 50 years, to Pencil Points (as P/A was then known) for June 1922, we can find what appears to be the real detachment. This was before the Great Depression and before the Bauhaus at Dessau; architecture—at least in the pages of Pencil Points—was blissfully free of socio-economic complications. What they built may not have been relevant to real needs—and subsequent history suggests that it wasn't—but architects of the time apparently enjoyed their designing.

Plate XXIV from the June 1922 issue (reproduced here) captures the spirit of the time. This pencil sketch by Troy Kinney was one study for a set of murals on the dance. Since this



figure was to appear in the "Classic" dance panel, the young lady must be playing a pipe, not taking a drag on her cigarette. Her purpose in the magazine, ostensibly, was to keep readers informed on the state of mural art. The panels were to be painted, the caption explained, "in light, soft tones like those in old tapestries."

In a more practical vein, the issue included one installment of a series entitled "A Vocabulary of Atelier French" by Raymond M. Hood (who was to become famous only later as a designer of such skyscrapers as the New York Daily News building and collaborating architect of Rockefeller Center). In introductory notes to the vocabulary, the editor observes: "It will be of special value to students in the ateliers in this country as well as to those who may later study at the Ecole des Beaux Arts in Paris, for there has been, we believe, no vocabulary published giving the special meanings of these words as used in the architectural atelier."

Hood's vocabulary includes the strictly pragmatic (Echafaudage: n.m. a scaffold), but gives special attention to the jargon of the Ecole. There is of course the Esquisse-esquisse (n.f.: a twelve-hour sketch) and less familiar terms such as Envoi, in the special sense of "a drawing made by a scholarship student to be sent to his masters." Other entries are more socially conscious: i.e. "Evêque: n.m. a bishop; slang of the Café des Deux Magots, a Manhattan cocktail."

Flipping back to the May issue, we find one of the few words that the Ecole contributed to current U.S. usage: "Charrette: n.f. a cart; *en charette* (slang, arch.) the final drive to complete a project." Even in those days of soft-toned murals, the design conceived at the cafe table had to weather the harsh discipline of the charette. Architects learned a simple dichotomy—personal invention vs. external constraints—which many were never able to reconcile. Perhaps in these days of admitted complexity, this conflict can be resolved.

*John Morris Dittus*



# A summation of parts

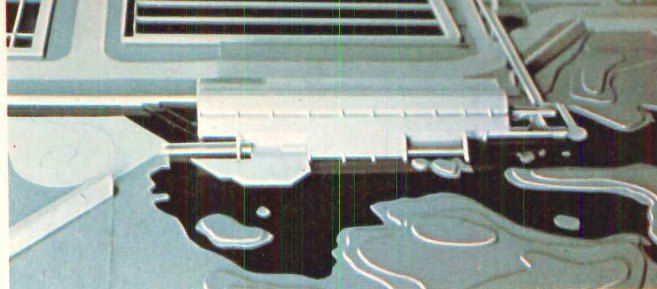
**Bringing together diverse capabilities, DMJM has shown the firm's commitment to an interdisciplinary practice. Assembly of a team, expert in many fields, was not accomplished in short order but has been, and will be, a continuing process which responds to changes and opportunities. It is the meaning of the word 'practice' that has changed at DMJM**

In the beginning, there were Daniel, Mann and Johnson. Then Mendenhall. Since then, there has emerged an architectural-engineering practice that has grown to include, and be included by, a whole host of disciplines. Within the architectural profession, DMJM's route may seem an inspiration to some and a threat to others. DMJM, however, has turned the all-too-common pitfalls of practice management into not-so-common successes. Because of its interdisciplinary nature—22 separate professional specialties—DMJM no longer can be described in the terms adequate for its A/E firm beginnings, yet those basic skills around which the firm has grown have not diminished, but show signs of being stronger than ever. Much of the graphic material and philosophy on the following pages illustrates those signs from an architectural viewpoint. Since each discipline forms a part of the team, and design is one of those parts, it will serve as a yardstick. Other capabilities are described, though in less detail, implying combinations through which the team functions.

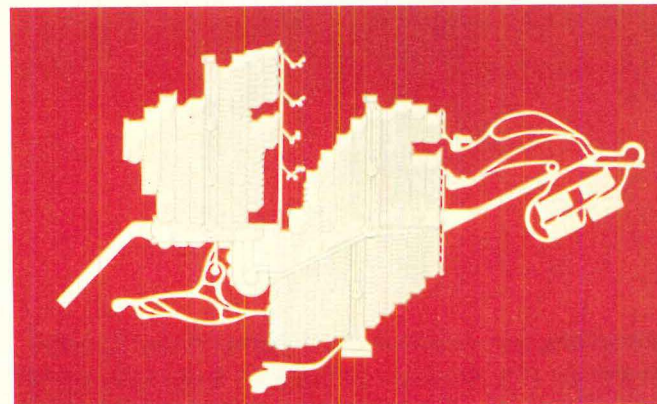
## At first

Both Phillip Daniel and S. Kenneth Johnson were depression era graduates of the University of Southern California, and Arthur Mann received his training at The Beaux Arts Institute of Design and The Chouinard Art School. Irvan Mendenhall was a civil engineering graduate of the University of California at Berkeley. World War II put an end to civilian business, and Daniel closed the small office in rural Santa Maria, Calif. that he had operated since its owner's sudden death. Daniel met Mann while both worked on a rushed steel mill project and they made tentative plans to form a practice after the war.

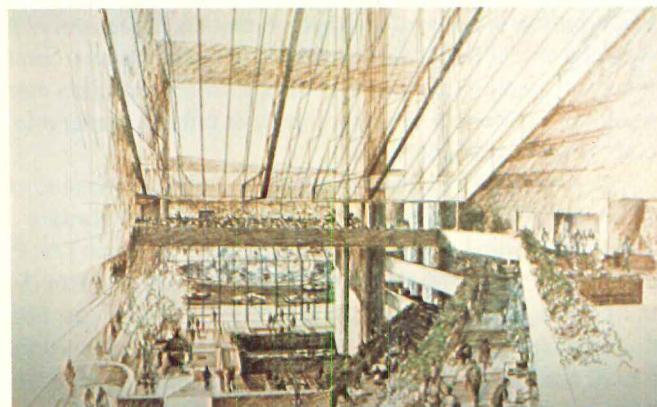
Returning from the service, Daniel and Mann were joined by Johnson, and reopened a practice in Santa Maria. Mendenhall also returned to Santa Maria to open a small practice, handling engineering for Daniel, Mann & Johnson as a con-



The Sepulveda Water Reclamation Plant, P/A Design Award, 1971



Hill Rise Housing, Hawaii, cuts travel distance to units.

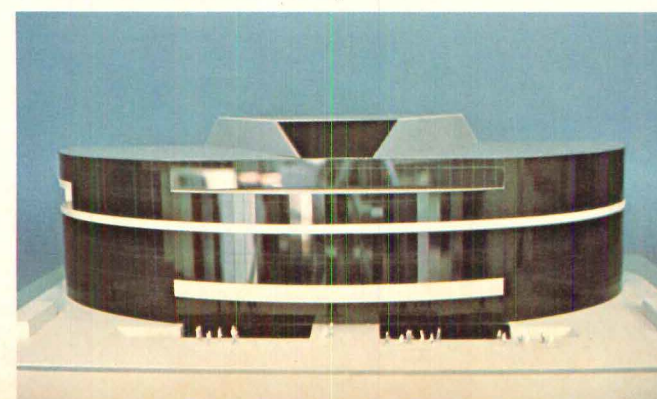


Central shopping "street" of a proposed Beverly Hills hotel.

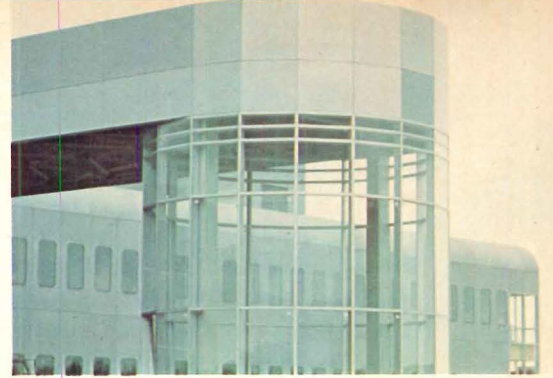
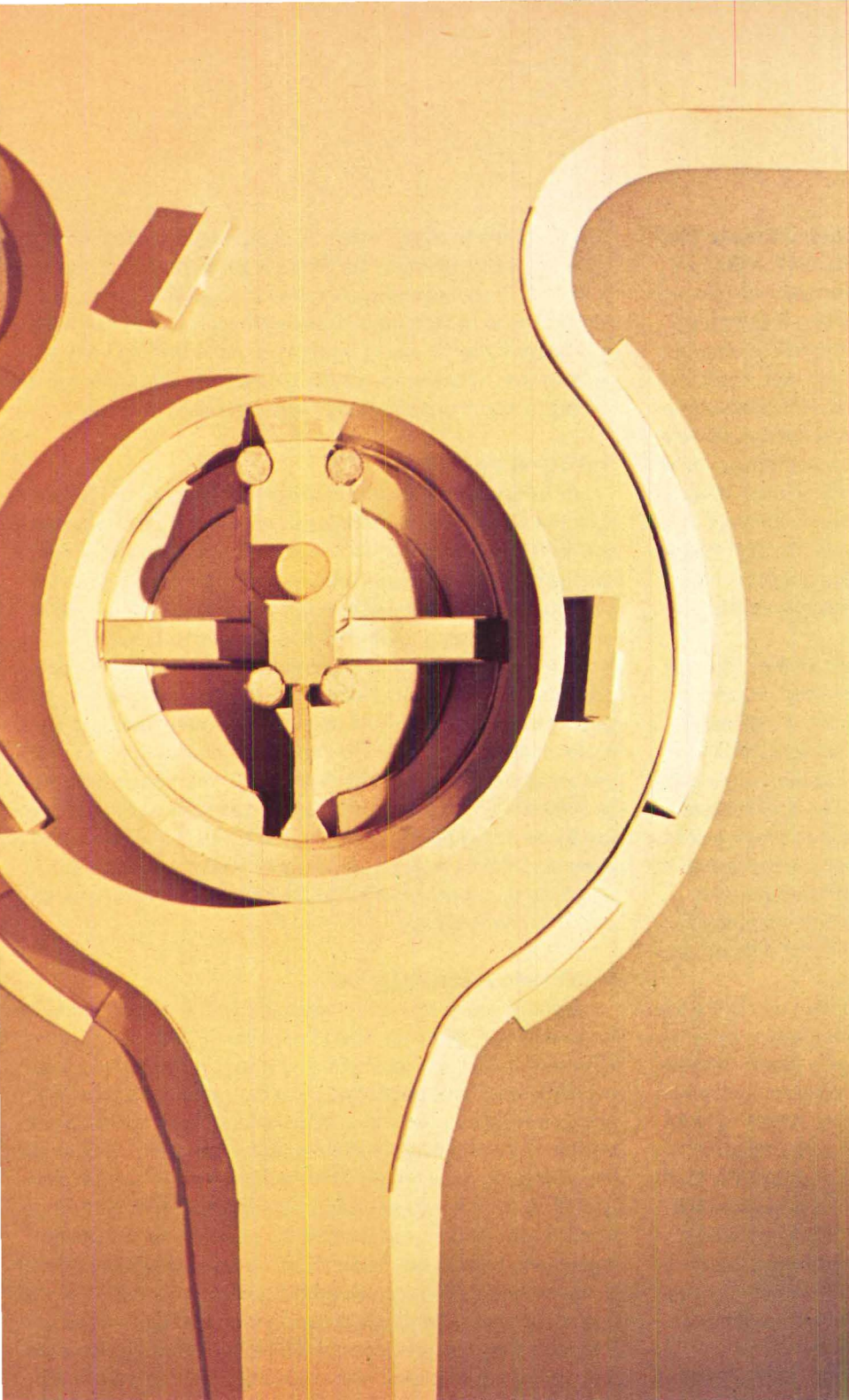


Projected development of the Los Angeles Rapid Transit system.

Beneficial Life Insurance Building



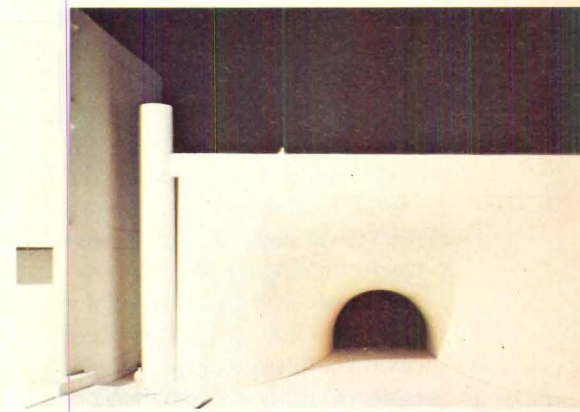




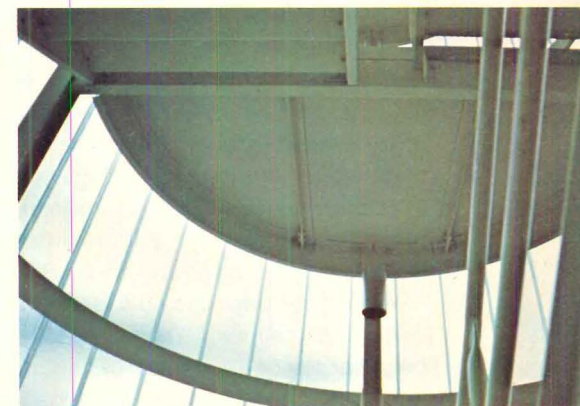
Entry detail at Comsat Laboratories, Md.



Lawrence Welk Plaza started DMJM in development.

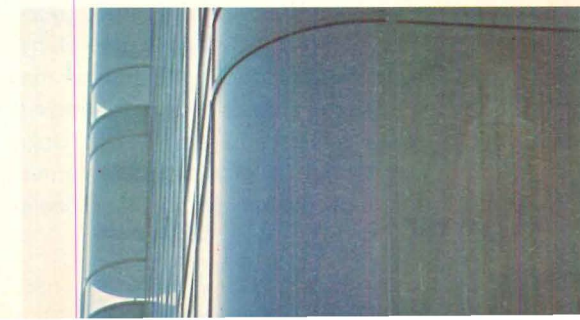


Third Street Tunnel, a dark-to-light transition.

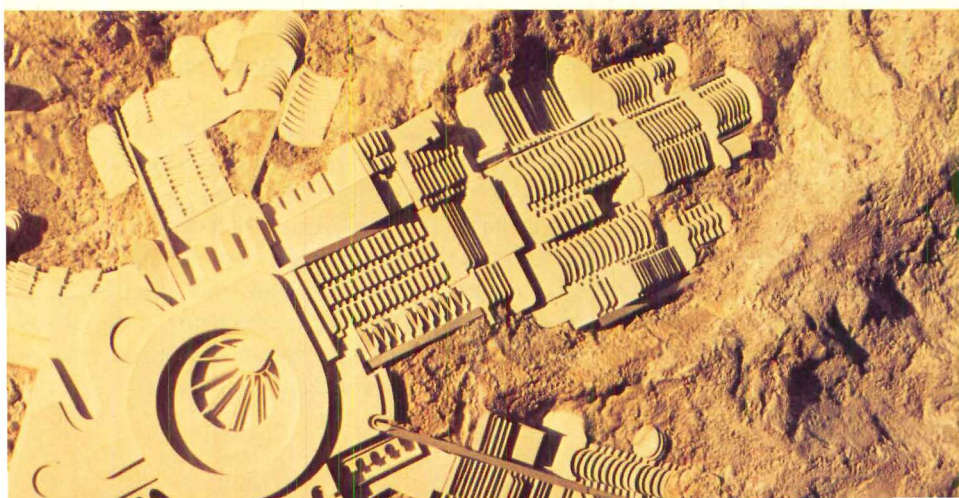


Stair, Marina City, Marina Del Rey, Calif.

Corner detail of One Park Plaza.



Part of a system of freeway express bus lanes, the El Monte Bus Station (above) derives its form through grade separations and bus turning radii. Sunset Mountain Park housing development, Santa Monica Mountain (below).





sultant. Realizing the far greater growth potential in Southern California, all four moved to Los Angeles in 1947, although Mendenhall maintained his separate but related practice until 1949. The four-man partnership formed in that year had an initial heavy commitment to school work, but also expanded into other types of work, and growth followed fast. Their first major organizational crisis came in the early 50's when they realized the need for a comprehensive cost control and business development program—still a major factor today—as well as a method to survive the downturn in activity caused by the Korean War. They accomplished the latter by enlisting for overseas duty as architects and engineers in military and AID assisted programs. Daniel led their interests internationally, militarily and in the space program, interests still evident in DMJM work.

During the late 50's and early 60's, two architects, Stanley Moe (now retired) and T.K. Kutay, joined the firm as principals. The partnership became a corporation in February of 1960, which carried the firm into its 25th year and transition again. Their most recent structural reorganization followed a management study in 1969, initiated to shape it for second generation management and ownership and to provide structure for the multidiscipline and multicompany organization it now is. David Miller, Sven Svendsen, Albert Dorman, and Stanley Smith have become major owners and members of the board of directors, representing the first true second generation managers to move into major roles.

Prior to this latest reorganization, production and programs (sales) were two distinct divisions with something of a gap between. Getting the two together, according to Albert Dorman, vice president and manager of corporate development, has eliminated that disparity, while decentralizing sales. To keep client confidence and continuity at a high level, there has been an increased emphasis on communications. DMJM now is based on three operating profit centers. These are: 1) the regional group, under which the offices in San Francisco, Portland, Hawaii, Washington, D.C., Las Vegas and the overseas offices are operated; 2) the A/E group, (sometimes overlapping the regional group), which controls architectural design, production, educational facilities, etc; and 3) the envirosystems group, controlling engineering, transportation, planning, environmental studies, systems and economics.

As the workload demands, branches are established and growth continues. In both the Portland and Las Vegas offices, DMJM acquired practices already in existence, and most regional offices have shown a tendency to effect branch office spinoffs of their own. These can take various forms and can be either temporary or not, depending on the potential for future work. "All branches have the advantage of DMJM's total capability range, but if that is not required, they often handle jobs themselves," says Sven Svendsen, vice president and manager of the regional group.

DMJM has already been recognized for its financial control; Arthur Young & Company, one of the big eight accounting firms, has credited it with a better management structure than many large industrial organizations. Charles Carlson, DMJM vice president and secretary-treasurer, gives much credit to Mendenhall, as president, for planning the firm's growth well and to the system devised for close control of contracts.

"First," Carlson says, "the project manager has to follow the contract, and then there has to be a good system of reporting to various levels of management—no easy task. For example, it took about 15 meetings for the principals just to establish a computer code for use in budgeting and reporting professional time." That accomplished, computer printouts of complete job status are distributed regularly to all involved.

#### **Taking off the blinders.**

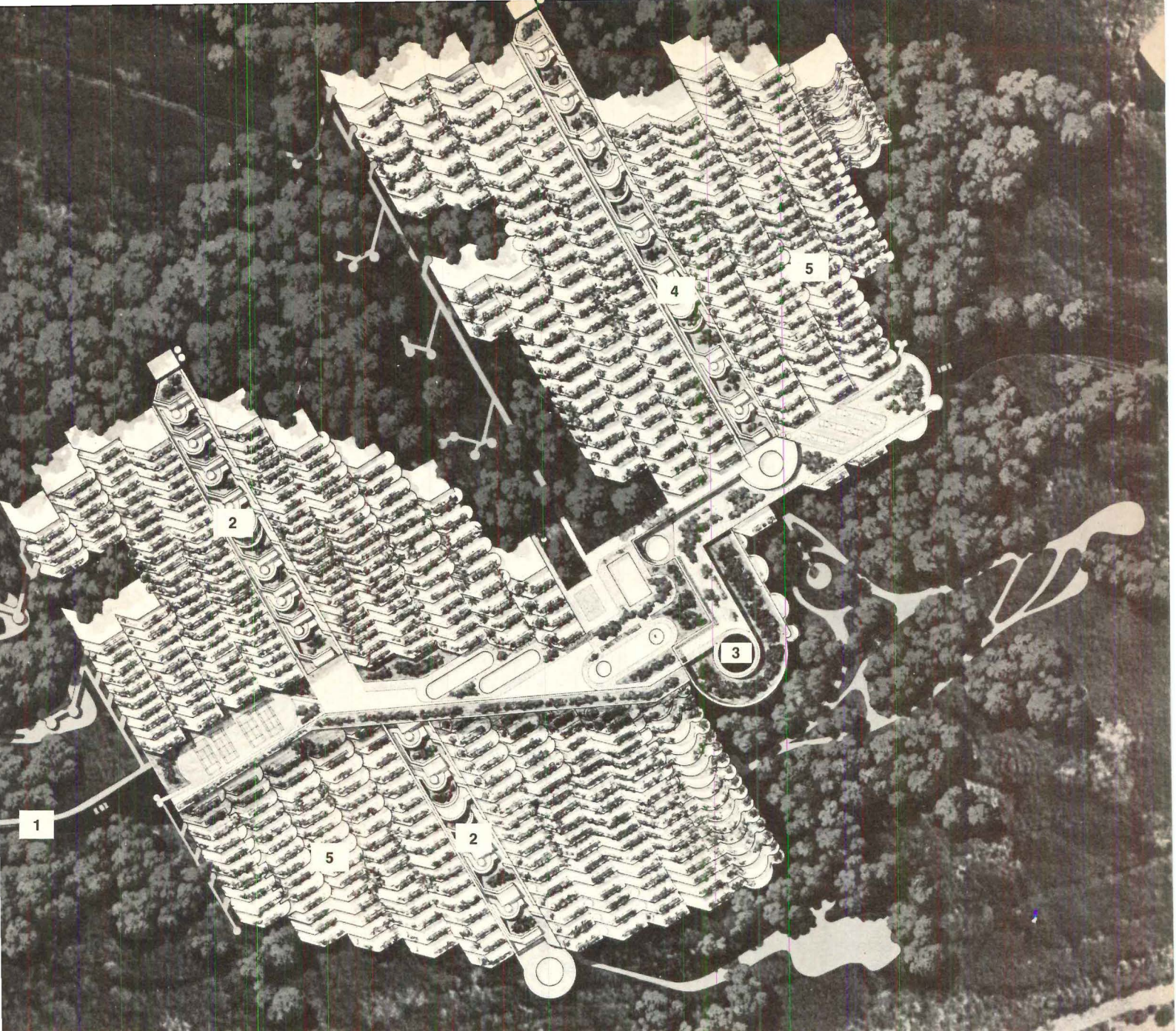
For all the praise due the management process of DMJM itself, the whole picture includes much more than a successful A/E firm. The aim stated by board chairman, Ken Johnson, seems to paraphrase that picture well. "We are trying to be alert to opportunities presenting themselves to the profession," says Johnson. The firm has, through this alertness, been led to innovation both within and outside the standard parameters of practice. Such innovation (and expansion) has become the nucleus of DMJM's overall philosophy, not only to serve the obvious growth potential, but also to fill an extant responsibility void that president Irv Mendenhall sees in the profession. Given the sheer magnitude of the challenges facing those charged with planning the built environment, and assuming the capability, Mendenhall feels it would be tantamount to irresponsibility if firms such as DMJM did not accept the challenges.

#### **Real Estate Technology, Inc.**

In recent years, one of the most influential forces acting on large-scale projects has been the power of real estate/development organizations. "A logical extension of our involvement," thought DMJM, as it happened into land ownership through a client's payment default. Why not an affiliate company for real estate development? The question obviously requires an expansion of some traditional architectural practice ethics with the newer approach to responsibility through opportunity. And so was formed the partially owned DMJM subsidiary, Real Estate Technology, Inc., sometimes referred to as Realtech. DMJM's ownership is through another subsidiary corporation, Real Estate Resources, partially owned by T.K. Kutay, who is president of RER and corporate vice president of DMJM. Realtech was originally a joint operation with David Wilstein, a client. A recent investment by Celanese Real Estate Investment Corporation, a wholly-owned subsidiary of the Celanese Corporation, through the formation of a holding company called RTI Corporation, may hasten the possibility of public ownership for Realtech, a phase DMJM had tentatively planned. At this time, DMJM, through RER, has an effective 32 percent ownership of RTI which in turn owns Realtech, enabling DMJM to provide more comprehensive services for its clients.

Besides the fact that Realtech as an investment is a major profit center for DMJM, it is also one of its most dependable sources of work. With a present staff of 20 and growing, Realtech, although a higher risk business, clearly will contribute substantially to the parent firm in producing revenue, according to DMJM secretary-treasurer Carlson. The capability to generate and complete jobs should not be taken as a move to own each property. DMJM and Realtech do not intend that, but rather intend to take the necessary risks and turn over



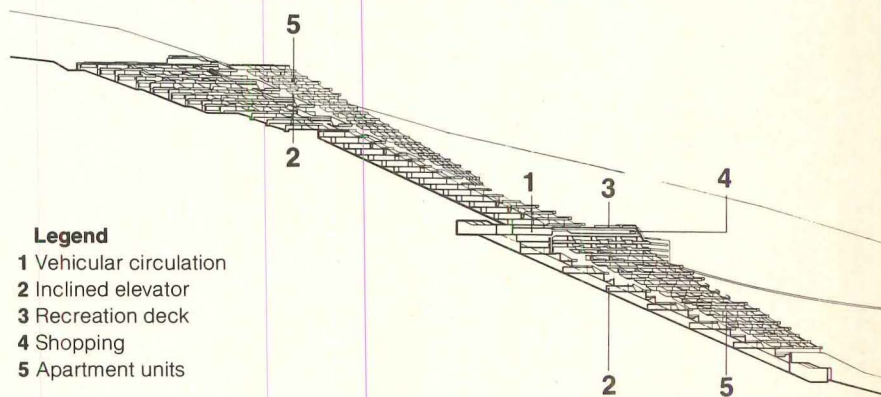


To cut inclined elevator travel, arrival at the Hill Rise development in Hawaii is at the center of the slope. Like Sunset Mountain Park Scheme shown earlier, Hill Rise would achieve low-rise high density with minimum land use. The design is based on the use of a system of 50-ft modules.

their equity, not hold it. With new contracts flowing in, Realtech seems well on its way. One of the best examples of the Realtech/DMJM teamwork is the new 22-story office building, of which approximately 100,000 sq ft is occupied by DMJM headquarters and affiliates.

#### Logicomp

One floor above DMJM is another affiliated company, Logicomp, a subsidiary owned by majority stockholder Phillip Daniel, the firm's original, and still biggest, computer booster. DMJM retains 10 percent interest, and shares are also held by some of its employees. Spinning off with DMJM's Univac 9300 computer, the company is engaged in computer services and is charged with, but not limited to, all DMJM computer operations. From its initial operations serving DMJM and one lawyer, the firm has grown to serve, among others, 17 architects and engineers outside of DMJM. As Phil Daniel puts it, "The computer is just a tool; there's no reason why it can't be used with some imagination." He sees in such DMJM commissions



#### Legend

- 1 Vehicular circulation
- 2 Inclined elevator
- 3 Recreation deck
- 4 Shopping
- 5 Apartment units



as the comprehensive statewide aviation plan for California, and others of complex scope, an upcoming demand that will exercise that imagination. A computer expansion of great magnitude is presently being considered.

#### Plus two

Two other offshoots, ADPA and Atadeco, add capabilities to the DMJM package. Atadeco has the most seniority. A long-established subsidiary, Atadeco originally was set up to manage overseas construction contracts. Now revived as a management company, its forte is seen to be in potential involvement in the "new" field of construction management in the U.S. and in building maintenance and management.

ADPA is an acronym for Advanced Design Planning Arts. It

is a spinoff of DMJM's interior design division and will begin life with headquarters in Los Angeles and offices in Ohio and Singapore. The Ohio branch is an acquired firm, and Singapore will be a separate corporation within ADPA. Offering interior and space planning design services, ADPA will, for clients only, handle contract buying and selling of furnishing lines as well, eliminating the middleman step often encountered in interiors.

#### Encore?

Questions about what comes next at DMJM are inevitable, but almost answer themselves, given the versatility and light-footedness expressed in their growth pattern to date. "We've become students of what's happening in other firms," says

## In the design department, no room for saints

Explicit in the workings of any team is the concept that its quality stems from all, not one, of its members. Design is, collectively, a member on the DMJM roster. But beyond that, it is a team also, not dependent on the "star" system. Still, it has had its spokesmen—those responsible for leadership and disciplinary interfacing, as well as design. Two such valuable contributors were added when Cesar Pelli and Anthony Lumsden left Eero Saarinen to join DMJM. Before moving on to another position, Pelli was director of design, the title Lumsden now holds. The ideas which help to shape DMJM design philosophy probably had their beginnings with both men. The position does not intrigue Lumsden. Yet in order to communicate design goals for the firm he has taken on the task, carefully avoiding what he calls "an attitude of withdrawal to supposed higher levels which remove architects from their craft." He adds, alluding to Camus' *The Plague*, "DMJM does not allow saints on the staff. Even if they are counting money instead of peas. Neither as an attitude for the profession nor in buildings as a product is withdrawal a possible position for a contributing design firm."

Withdrawal to something approaching sainthood has taken a number of forms in architecture, Lumsden feels. "Mies' attitude 'God is in the details,' or 'I don't want to be interesting, I want to be good' is implicit in his admiration for Aquinas. Unfortunately, such secondhand Aquinas becomes more 'how many angels can you fit on a pin,' and less 'truth is the significance of fact.'" Lumsden

feels that this attitude tends to sacrifice the potential of the present to a suppositional, unknown future.

Lumsden quotes Proshansky, who said, in *Environmental Psychology*, "Normal consciousness, perception and thought can be maintained only in a constantly changing environment. When there is no change a state of sensory deprivation occurs. Experiment has shown that a homogeneous and unvarying environment produces boredom, restlessness, lack of concentration and reduction in intelligence.

"This is the psychological basis for deliberately creating varying conditions in buildings. Office blocks in which each floor has the same layout, color, materials and climate are just asking for trouble. . . . The sort of variation that we often instinctively demand on aesthetic grounds has a sound physiological and psychological basis. A change in environment stimulates our built-in devices to perceive and respond rapidly to significant events. Our efficiency is thereby increased."

Another symptom indicating withdrawal to "refined" levels is noted by Lumsden. "A fantastic amount of information exists today which is relevant and essential to the solution of design problems. The reason architects cannot apply it is that our profession is so helplessly bound by its sacred paradigm—architecture is an art. Beyond this, there is no conceptual framework, no theory which can assimilate this information.

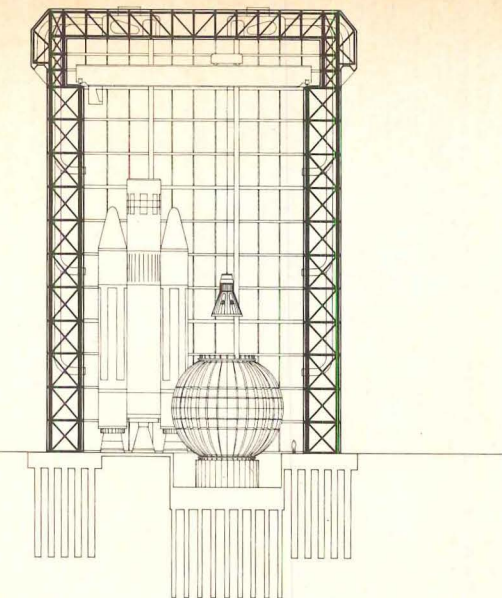
"The attitude that architecture is an art and superior to nature is clearly

stated in the famous quote that architects love and believe, 'A camel is an animal designed by a committee.' This is communicative of the attitude of single conception, grand and instantaneous, of building form and originator. Implicit is the denial of process and the tools that support it. More important, it is the denial of nature and vitality, illustrating the withdrawal attitude. Lincoln Center is an animal designed by a committee. But nature cares little for art. It cares little even for human vision. Phenomena in nature, of which form is one aspect, care little for human apprehension. Beauty is not achieved solely by human comprehension of what is beautiful.

"Most of the animal species are equipped with similar internal organs. Architecturally speaking, performance data and specifications on such disparate animals as a giraffe, a man and an elephant are quite similar despite different visual appearances. It is evident that nature produces extraordinarily different visual options in light of the functional similarities. Functionalism as a program is symbolically poverty stricken. Genetic engineering in evolution has retained the same basic structure in a series of different functions: the bird's wing, the horse's leg and a man's arm, all very different visually.

"Form does *not* follow function. The architectural categorization of form as static and function as operational is one of the dualisms under which architecture is suffering. Form has impact on all the sensory equipment we have. To follow 'form follows function' is to inhibit the a



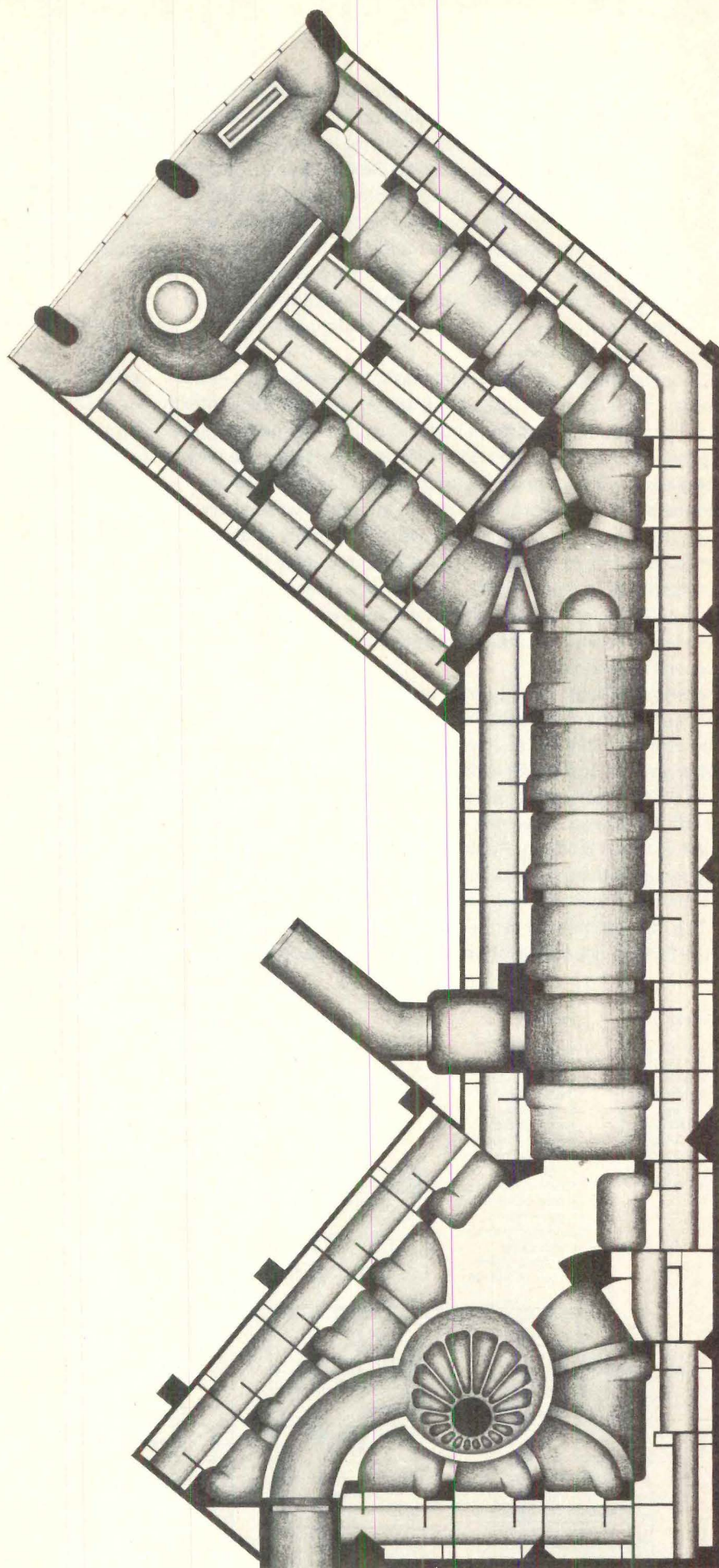


Lockheed Test Facility now under construction will be used for engine assembly and testing, as well as for pressure and gravity measurement.

architectural design process and to derive society of environmental solutions which are oriented toward humans. Architecture is not aesthetics alone."

DMJM anticipates that, along with the rest of the profession, it will play an increasingly active role in helping to develop answers to future human needs. Increased concern for the specific has brought a move away from an absolute aesthetic. Modern thought, and particularly modern science, has challenged the very idea of absolutes. In design, this is evident in buildings designed to consider growth, change and conditions of human activities. Freedom from the bearing wall and conventional structural methods, and freedom of the building from the ground has permitted the expansion of traditional ideas and theories.

As Lumsden phrases it, "DMJM's multiplicity brings a comprehensive look at the disparate aspects of practical, aesthetic and psychic experience. This expansion of methodologies allows us to see relationships between factors that the profession previously ignored or handled as if they were unrelated to one another. We are able to operate with the technological, social, cultural and behavioral determinants of buildings and the environment. DMJM is attempting to develop buildings which do not follow the patterns of techno-economic motivation, standardized with its frustrating monotony. Buildings which relate to man's basic physiology and organic responses, which recognize man as a biological individual, are the goal of our multidisciplinary activities."



An updating of an existing store, The Jewelry Mart in Los Angeles captures a bazaar-like, open quality through the use of booths which are accessible from broad circulation areas.



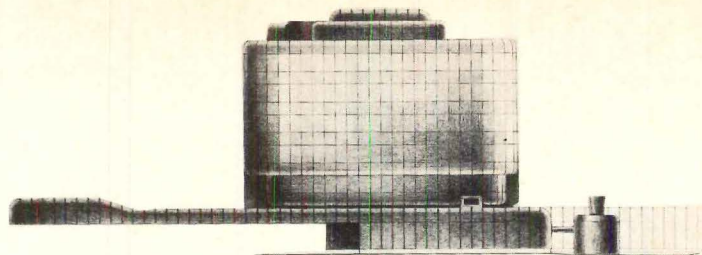
## Profile: DMJM

Mendenhall. "There is a coalescing process going on in a number of the large firms." To keep abreast in terms of total responsibility, he feels that architects should move toward interdisciplinary groups. Total responsibility implies the acceptance of multiple challenges of broader job scope, construction management, building operation and maintenance, and actual project financing and development. Mendenhall sees DMJM becoming a U.S. practice that is broader based, still involving 20 or 25 disciplines. "Our own international practice is changing also," he says, "from U.S. military and AID to more private development."

Looking ahead, Albert Dorman says, "The emphasis in the future will be upon the total social and environmental context of the project. The individual building will be viewed from this perspective. Since social and environmental issues are very complex, it will take complex interdisciplinary teams to approach them. Therefore, the firms of the future will be very large (by today's standards) to include the variety of disciplines required; or alternatively, will be quite small functioning as essentially specialty firms. The mid-size firm will have difficulty in surviving. Or, to use a homely example, the VW and Cadillac will each command a strong market, but the DeSoto may not have a place."

In short, DMJM, as a purely professional services firm, will probably become national through its policy of evolving localized branch offices. Also it will probably be relatively small in dollar volume compared with the potential dollar volume generated by its various subsidiary operations. It will continue to be labor intensive, however, in possible contrast to subsidiaries such as Realtech. Realtech will be capital extensive and engage in both secondary and equity financing as well as development and short-term ownership of real estate.

The management of all the firms, major and minor, will continue to be in the hands of professionally trained managers.



West Coast headquarters for the Federal Aviation Agency is an expression of a variable surface, or skin, defining mass with a membrane. Pulling the skin in over the top edges to meet the roof, and rolling it under and around, design subordinates structure to covering, as in other DMJM work.

For the near future, at least, most of them will retain some form of ownership in the venture in which they are most closely involved. Public ownership of any of the subsidiaries, or of DMJM itself, would change the picture, of course, although general public ownership of DMJM is not contemplated at this time. Nor is a merger or outright sale to any larger interest considered, though many such offers have been received. Continuing also will be the concept of four self-contained and self-generating groups for architecture, urban and regional sciences, civil engineering and transportation, and branch and regional offices, since that seems the best structure to serve clients' needs of the 70's.

Within DMJM there is clear evidence of the transition to second-generation management. Of the 11 current principals of the firm, 5 are architects and 6 are engineers. Enlarged capability has required distribution of the firm's responsibilities to more shoulders. But it's not really that the baton has passed entirely. Phil Daniel is, among other things, still taking 20-week computer courses. Ken Johnson is as busy as ever getting work and seeing it through. Art Mann and Irv Mendenhall are keeping the firm's collective eye on the professional overview and the future. They're still running, probably harder than ever, but with a good deal of support. After all, the firm has over 600 employees and an average annual billing of over \$15 million with which to contend. [JM]

### Directors

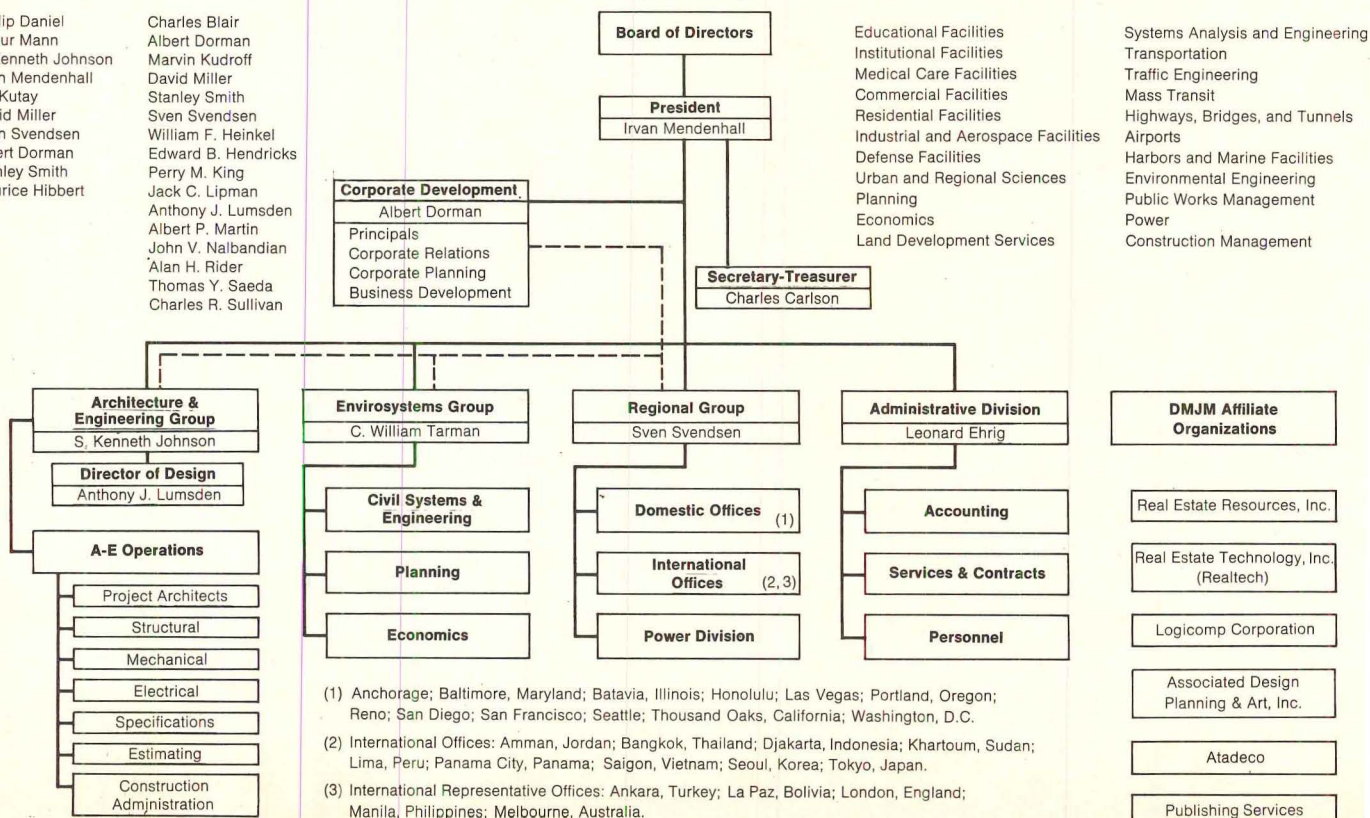
Phillip Daniel  
Arthur Mann  
S. Kenneth Johnson  
Irvan Mendenhall  
Tef Kutay  
David Miller  
Sven Svendsen  
Albert Dorman  
Stanley Smith  
Maurice Hibbert

### Principals

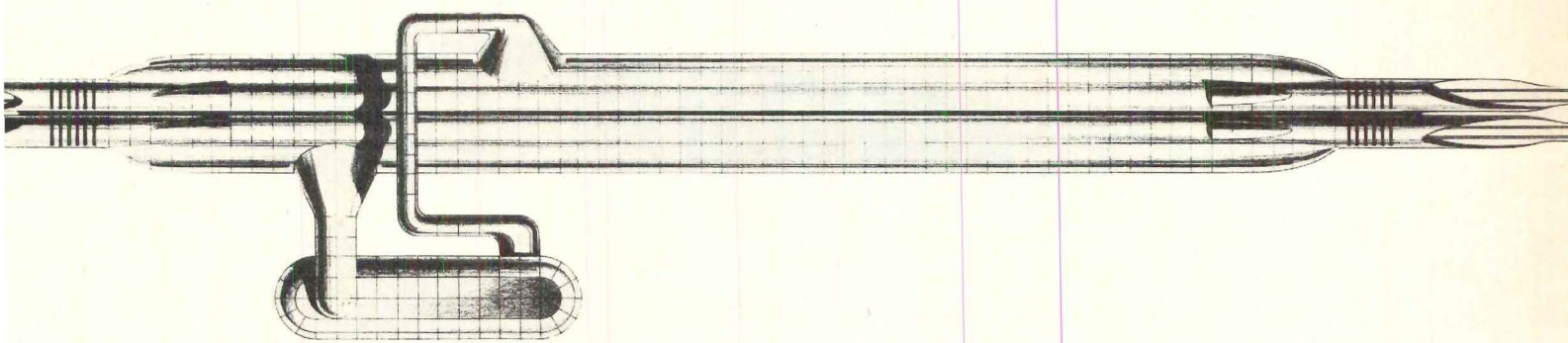
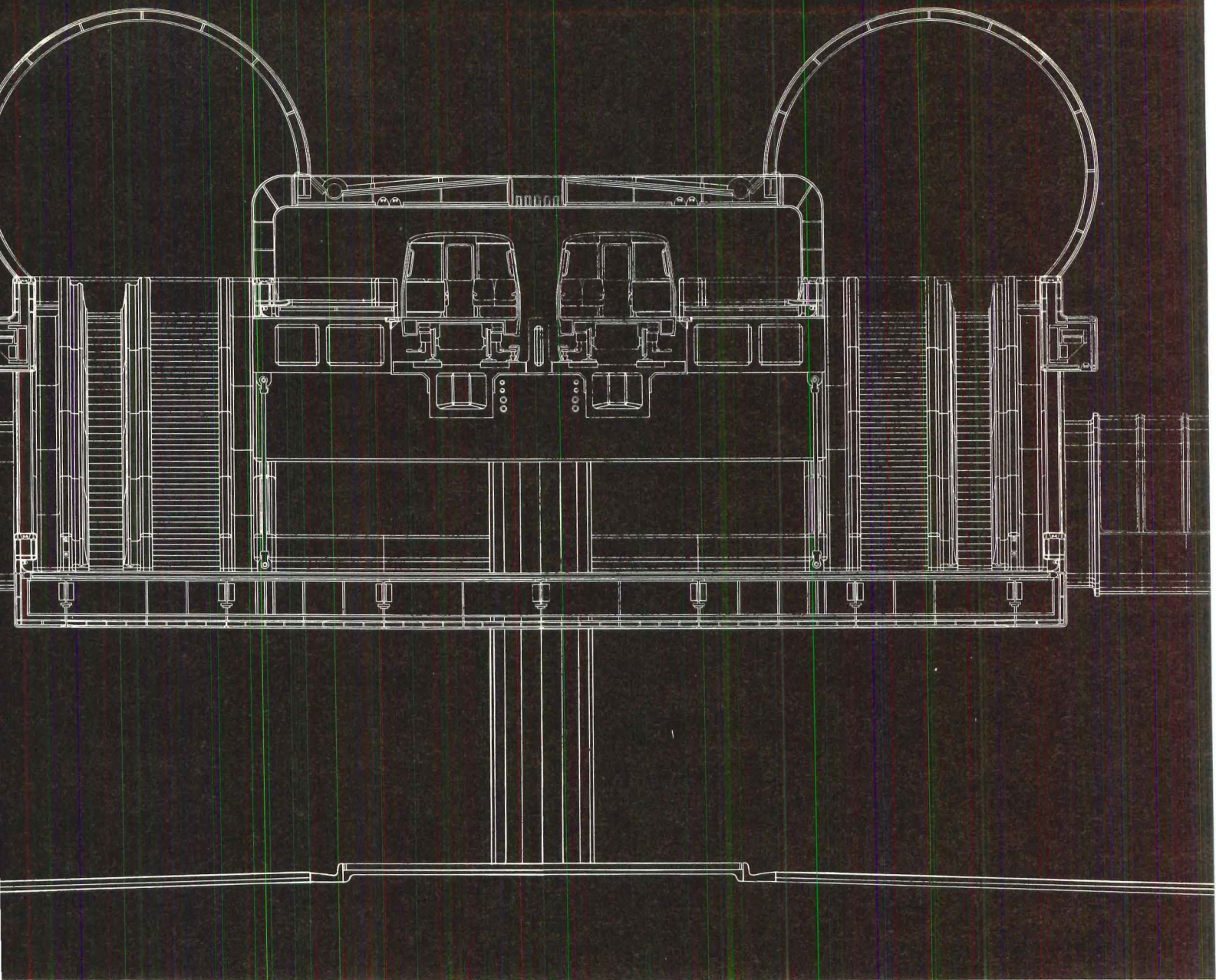
Charles Blair  
Albert Dorman  
Marvin Kudroff  
David Miller  
Stanley Smith  
Sven Svendsen  
William F. Heinkel  
Edward B. Hendricks  
Perry M. King  
Jack C. Lipman  
Anthony J. Lumsden  
Albert P. Martin  
John V. Nalbandian  
Alan H. Rider  
Thomas Y. Saeda  
Charles R. Sullivan

## DMJM Corporate Organization

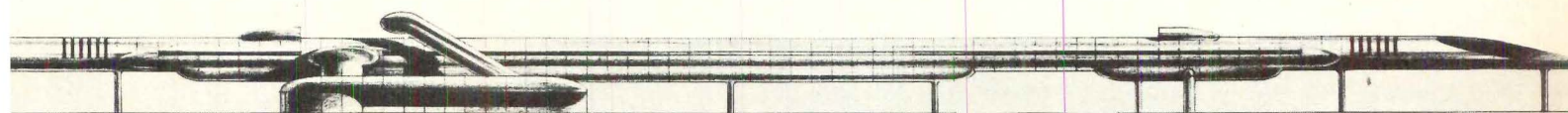
### PROFESSIONAL SERVICE FIELDS



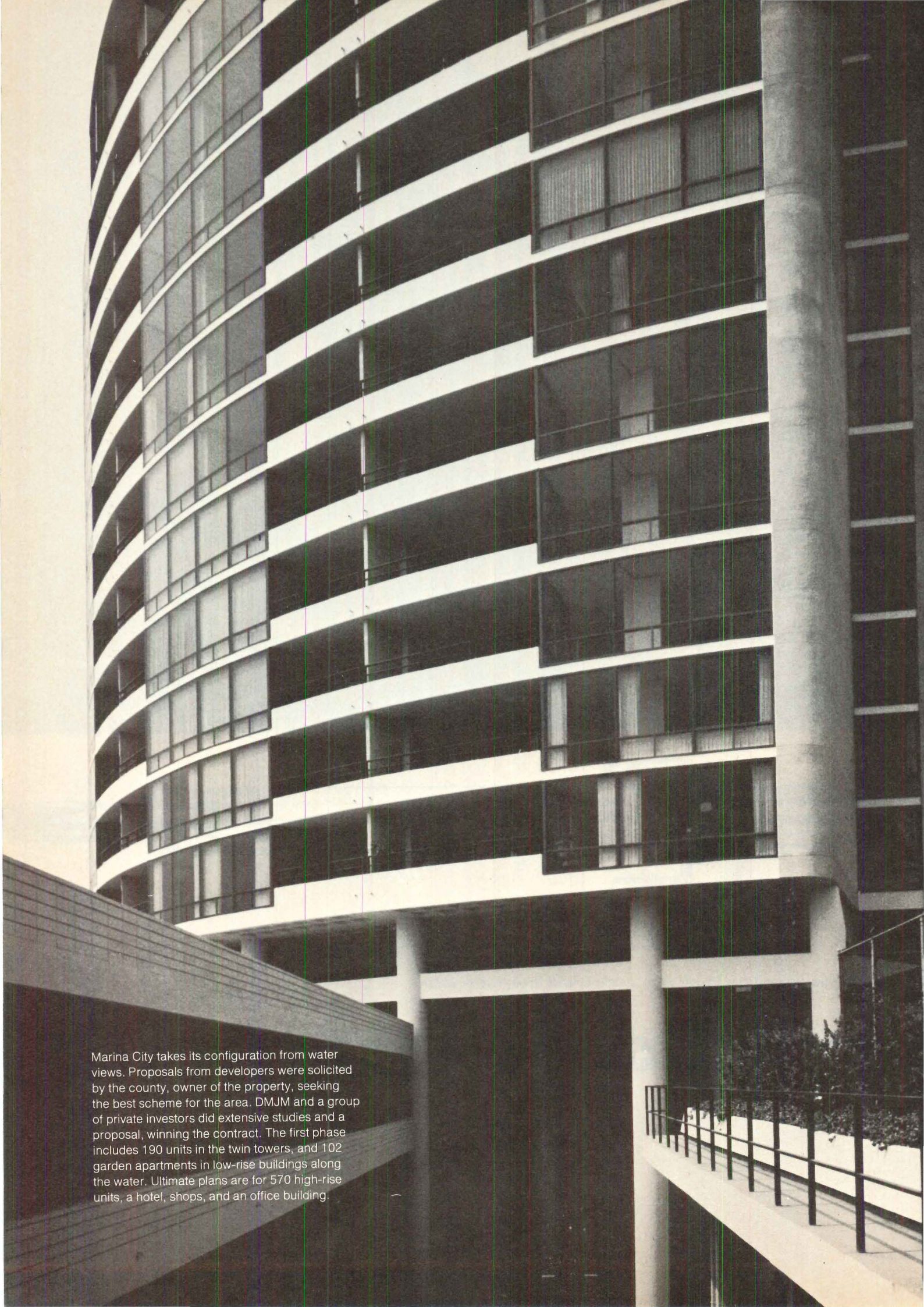




Developed for the Los Angeles Rapid Transit District, prototype station would have a metal skin.



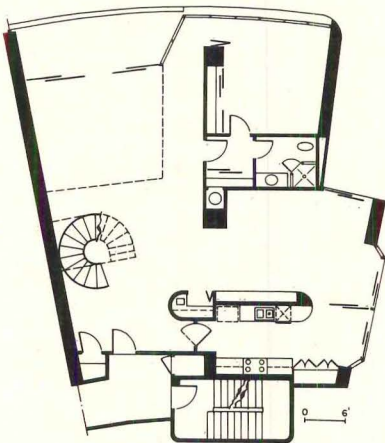
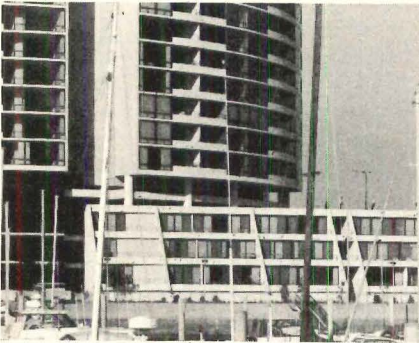




Marina City takes its configuration from water views. Proposals from developers were solicited by the county, owner of the property, seeking the best scheme for the area. DMJM and a group of private investors did extensive studies and a proposal, winning the contract. The first phase includes 190 units in the twin towers, and 102 garden apartments in low-rise buildings along the water. Ultimate plans are for 570 high-rise units, a hotel, shops, and an office building.



Profile: DMJM



Data

**Project:** Marina City, Marina Del Rey, Calif.

**Architects and engineers:** Daniel, Mann, Johnson & Mendenhall.

Principals in charge: P.J. Daniel, S.B. Svendsen; Project Director, A.P. Martin; Director of Design, A.J. Lumsden; Project Designer, R.L. Tipping.

**Program:** first phase of an integrated land-use complex, comprised apartment towers, low-rise garden apartments, parking structures, a marina, two restaurants, an 800-room hotel, 20,000 sq ft of commercial shops and a 200,000 sq ft office building.

**Site:** small craft harbor, Marina Del Rey; 10.9 acres of water and 20.1 acres of land at the head of the main channel.

**Structural system:** type 1, flat slab on concrete columns, carried on piling-supported foundations, block bearing walls on low-rise units.

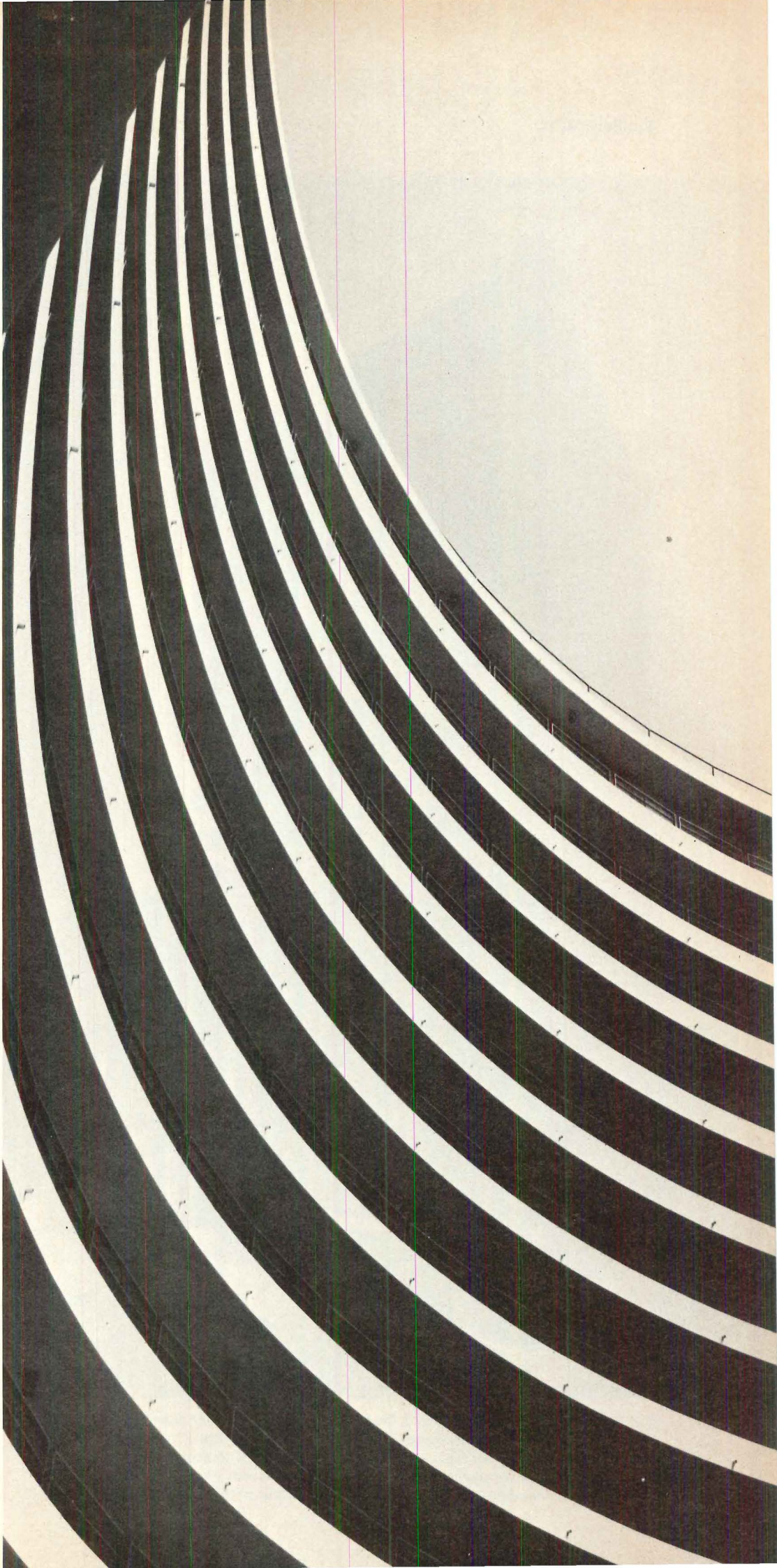
**Mechanical system:** electric heat and air conditioning (electro hydronic units).

**Major materials:** reinforced concrete frame and slabs, concrete block exterior walls, anodized aluminum window frames, metal stud and gypsum board interior walls.

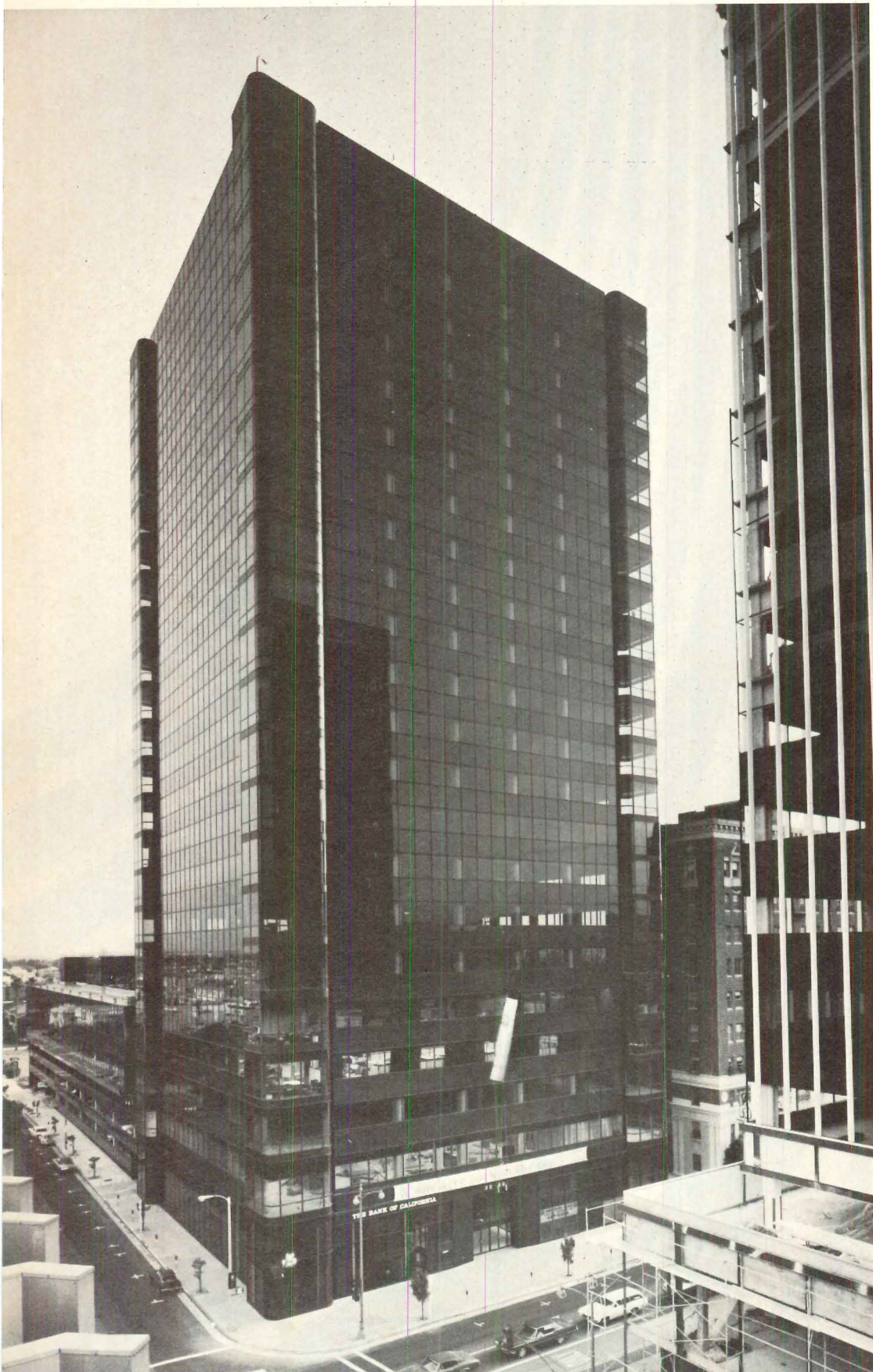
**Costs:** (first stage) site work and utilities, \$570,000; slip facilities, \$550,000; parking facilities, \$1,200,000; apartment facilities, \$10,230,000; restaurants, \$250,000.

**Consultants:** landscape architects, Armstrong & Sharfman.

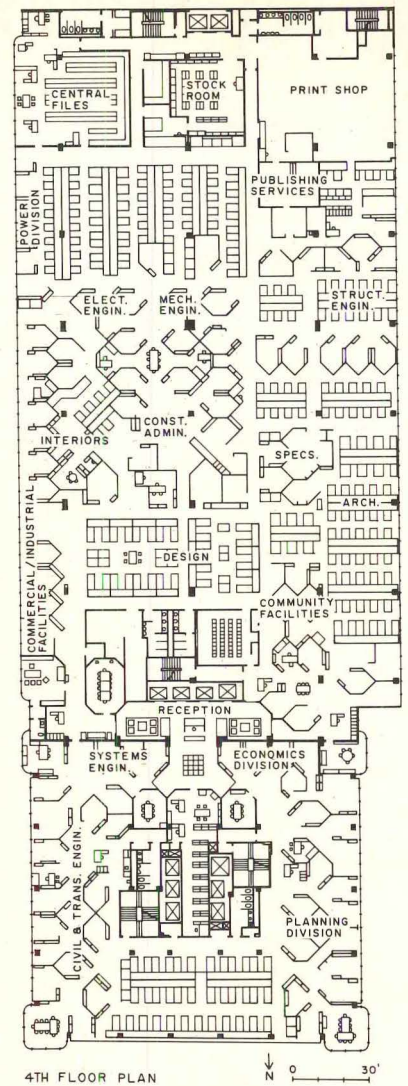
**Photography:** Wayne Thom.







One Park Plaza, on Wilshire Boulevard, the new headquarters of DMJM. Plan (above) of tower and low-rise portion of building. Developed by DMJM subsidiary, Real Estate Technology, Inc., the building expresses a system of enclosure that is related to the performance requirement of enclosure of other physical entities such as automobiles, the body or airplanes. With a skin membrane, the enclosure is not limited by the rigid discipline of structural expression.



#### Data

**Project:** One Park Plaza, Los Angeles, Calif.

**Architects and engineers:** Daniel, Mann, Johnson & Mendenhall.

Project Director, A.P. Martin; Project Manager, T.Y. Saeda; Director of Design, A.J. Lumsden; Project Designer, D.E. Wilson.

**Program:** 22-story office tower and low-rise building with a total of 450,000 sq ft.

The low-rise houses parking for 800 cars below and at grade level, and two tenant floors above, with a one-acre park and restaurant on the roof deck.

**Site:** urban, in mid-Wilshire district, Wilshire Blvd., Los Angeles.

**Structural system:** structural steel framing on tower, post-tensioned concrete beams and slabs on low-rise.

**Mechanical system:** gas fired hot water, heat and air conditioning supplied by electric unit heat pumps in the ceiling.

**Major materials:** exterior, bronze glass and anodized aluminum mullions, reversed to minimize disruption of skin; interior, dark terrazzo floor and wood walls in lobby, metal stud and gypsum board partitions, carpeted floors.

**Costs:** \$11.6 million.

**Consultants:** landscape architects, Armstrong & Sharfman.

**Photography:** Wayne Thom.



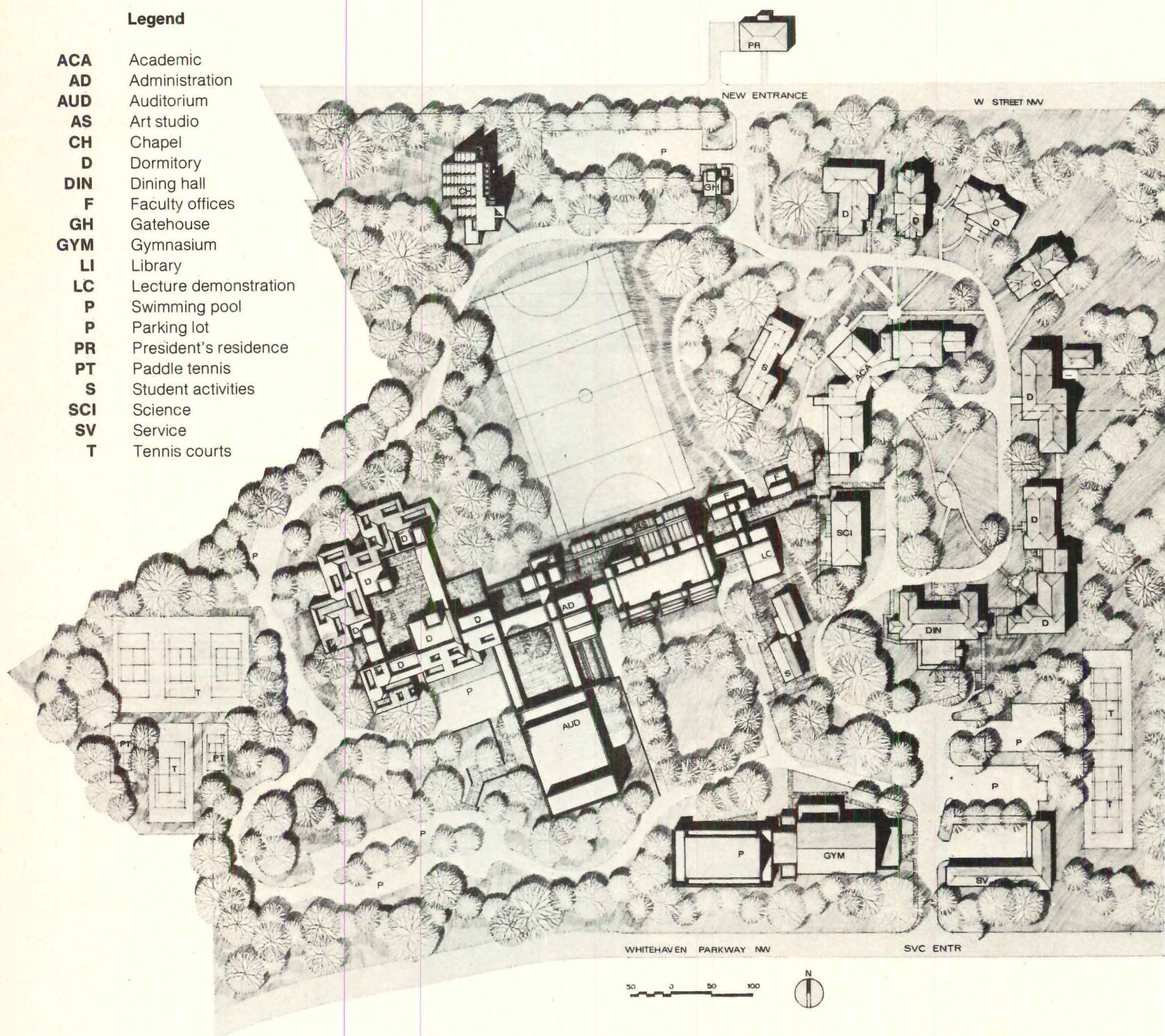




# Growing gracefully

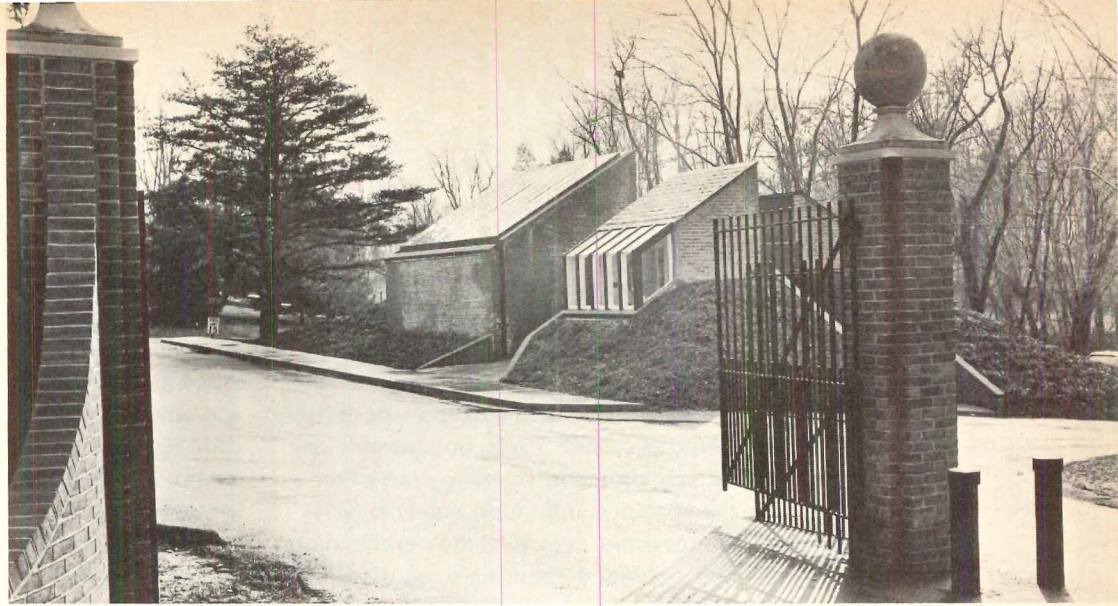
## Legend

ACA	Academic
AD	Administration
AUD	Auditorium
AS	Art studio
CH	Chapel
D	Dormitory
DIN	Dining hall
F	Faculty offices
GH	Gatehouse
GYM	Gymnasium
LI	Library
LC	Lecture demonstration
P	Swimming pool
P	Parking lot
PR	President's residence
PT	Paddle tennis
S	Student activities
SCI	Science
SV	Service
T	Tennis courts



In Mount Vernon College's new master plan, the old neo-Georgian quadrangle will be linked to the new residential complex by the future academic mall.





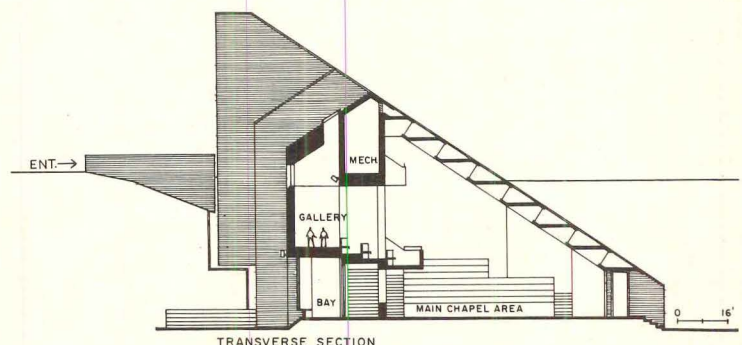
To blend with older buildings on the campus both the chapel, below, and the gatehouse, below, were carefully designed and sited to diminish their size, and they have been clad in materials common to the other buildings.

**A small college on a limited site has planned for its future expansion with foresight that respects both the natural beauty of the campus and the character of older buildings**

Mount Vernon College is a small, two-year girls' school set in a densely wooded, 26-acre campus in northwest Washington, D.C. The campus is presently big enough for its 300 students, but because the college expects to double its enrollment within the next few years, extensive new building is planned. The buildings so far completed—the chapel, a gatehouse and the first phase of the new dormitories—have been carefully designed and sited to diminish their size. This conforms to the school's firm policy not to damage the character of the predominantly neo-Georgian campus as it now stands, nor to destroy any of the natural beauty of the site.

When the Washington firm of Hartman-Cox was asked to master-plan the campus and design all of its future buildings, one of the first suggestions was to move the main campus entrance, which was directing all traffic into the old residential quadrangle of 1940s neo-Georgian buildings. Closing the old quadrangle to vehicular traffic both preserved and reinforced its original character. Placing the entrance off a major avenue also provided easier access to the campus and removed traffic from nearby residential streets; in addition, the new location allowed for ample parking space away from the pedestrian-oriented residential areas.

Under the new master plan, the first building completed was the 300-seat chapel. Because the chapel was designed as a multiuse space for worship, music, drama and other activities which the public is invited to attend, it is sited near the

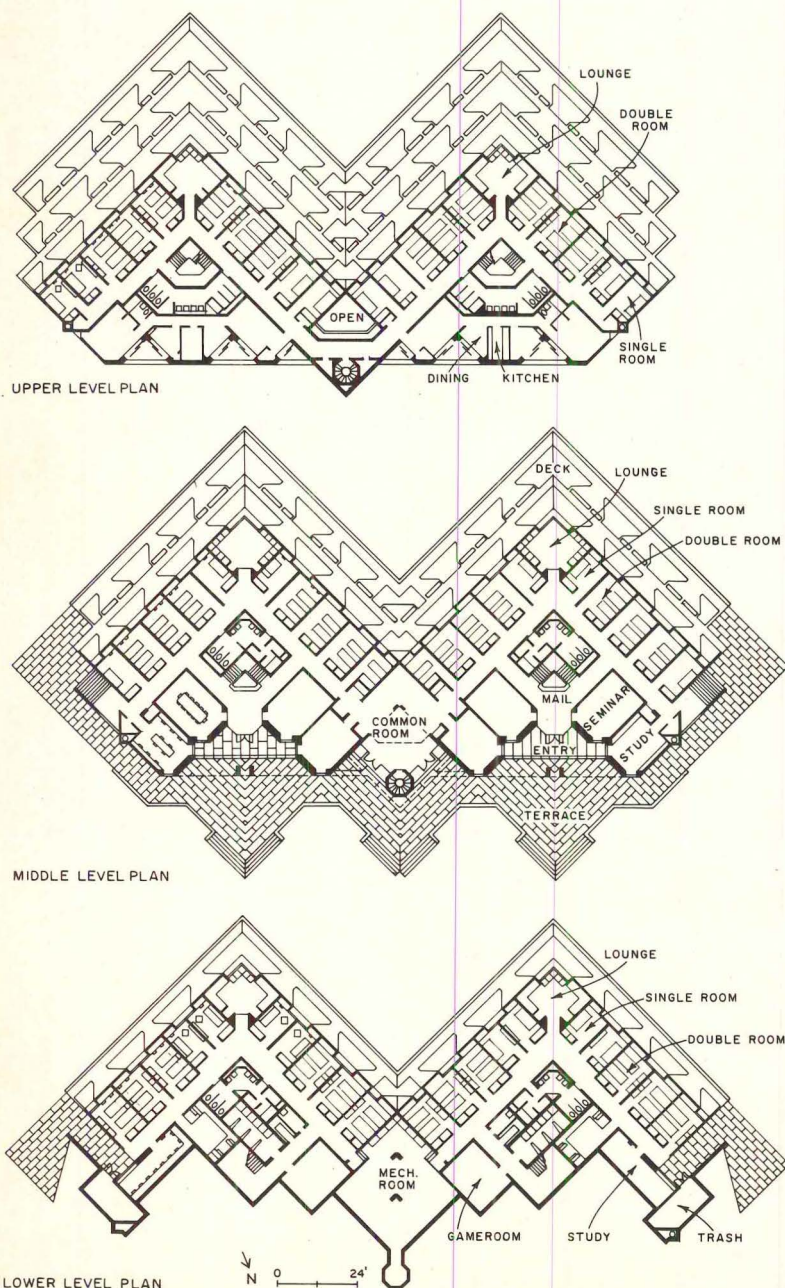




## Growing gracefully

new entrance where it is easily accessible and where ample parking is available. Because zoning regulations prohibit buildings over three stories, the chapel was designed basically as a linear structure. Its siting, however, is unusual; the building spans a stream as it rises out of a deeply wooded 30-ft ravine. It can be entered at several levels, but the main entrance at the top is the most dramatic, opening onto a balcony that overlooks the spacious, light-filled main chapel area, and beyond into the ravine. Like all of the new buildings planned for the campus, exterior materials are red brick and natural slate, which are characteristic of the older buildings.

The next building to be finished was the gatehouse at the new campus entrance. In earlier times, Mount Vernon College was a closed campus and the gatehouse served mainly as a reception lounge. That policy has recently changed, but even with an open campus the students still use the building as a meeting place. The new gatehouse is clad in the characteristic materials, and has been bermed around the sides to purposely diminish its size.



The major portion of the planned new construction is not near the chapel and gatehouse, but across the playing field on the other side of the campus. This section will be developed as an almost continuous complex of buildings that will include an auditorium, administrative offices, lecture hall, art studios, faculty offices, classrooms and dormitories. The complex begins at the old neo-Georgian quadrangle, stretches across the playing field as a pedestrian street lined with the new facilities, and continues to the new residential quadrangle on the opposite hill. Because of the compact grouping and the controlled and limited circulation, relatively little of the natural beauty of the site will be disturbed and much open space will be retained for playing fields. At the same time, individual building elements have been broken down in size, and the spaces between them have been made deliberately small to reflect and reinforce the scale of the existing campus.

The first part of this complex to be completed is the new three-story, two-unit dormitory. Student rooms and private lounges are arranged along the outside of a bent corridor, oriented away from the campus, while the common rooms, seminar rooms and faculty apartments are on the inside looking toward the entrance quadrangle.

To reduce the scale and apparent height of the structure, the dormitory was designed to follow the natural contours of the site; the floors have been successively stepped back, and the roof has been brought to the base of the building as a continuous element, punctuated only by skylights and by cut-out terraces that open from the bedrooms and lounges. This roof design, the architects say, provides an important sense of privacy to each terrace, and it did not add to the cost.

Like the other new buildings, the structure is concrete block and concrete planks, clad with red brick and slate. On the interior the concrete block walls have been left exposed and painted white. Color has been added to the lounges by surfacing the floors with red vinyl tile, while the cushions of the white furniture are upholstered in a rich, primary blue. The students' bedrooms are carpeted in different colors and all of the furniture units, designed by the architects themselves, are painted white. [DM]

### Data

**Project:** Mount Vernon College dormitory, Washington, D.C.

**Architect:** Hartman-Cox Architects.

**Program:** in one structure, dormitory and related facilities for two groups of 48 students, including seminar rooms and two faculty apartments, related in scale and materials to existing neo-Georgian buildings.

**Site:** wooded knoll in undeveloped area of campus.

**Structural system:** concrete block bearing walls, precast concrete plank floors and ceilings.

**Mechanical system:** gas hot water heating and air conditioning with fan-coil units.

**Major materials:** concrete block exposed on interior, faced with brick on exterior. Concrete floors covered with resilient tile and carpet, exposed concrete ceiling painted, roofs covered with slate.

**Costs:** \$687,500 not including fees, landscaping and furnishings.

**Consultants:** Lester A. Collins, landscape; Hartman-Cox, interiors; Smith & Lee-Thorp, mechanical; Alfred H. Kraas, structural; Dober Paddock and Upton, planning.

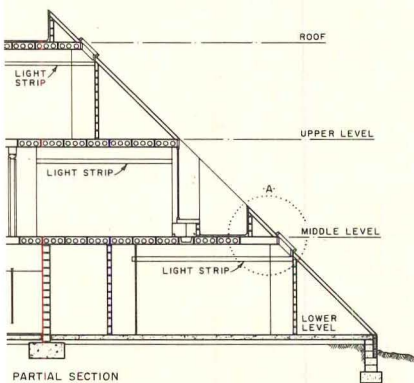
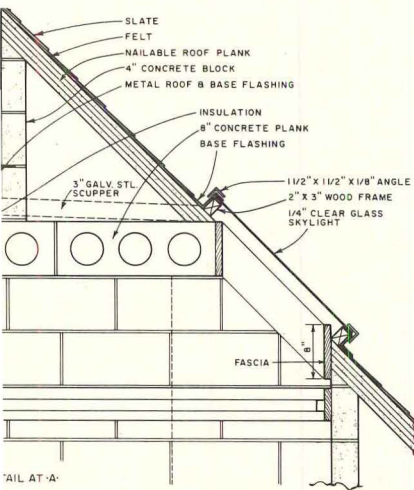
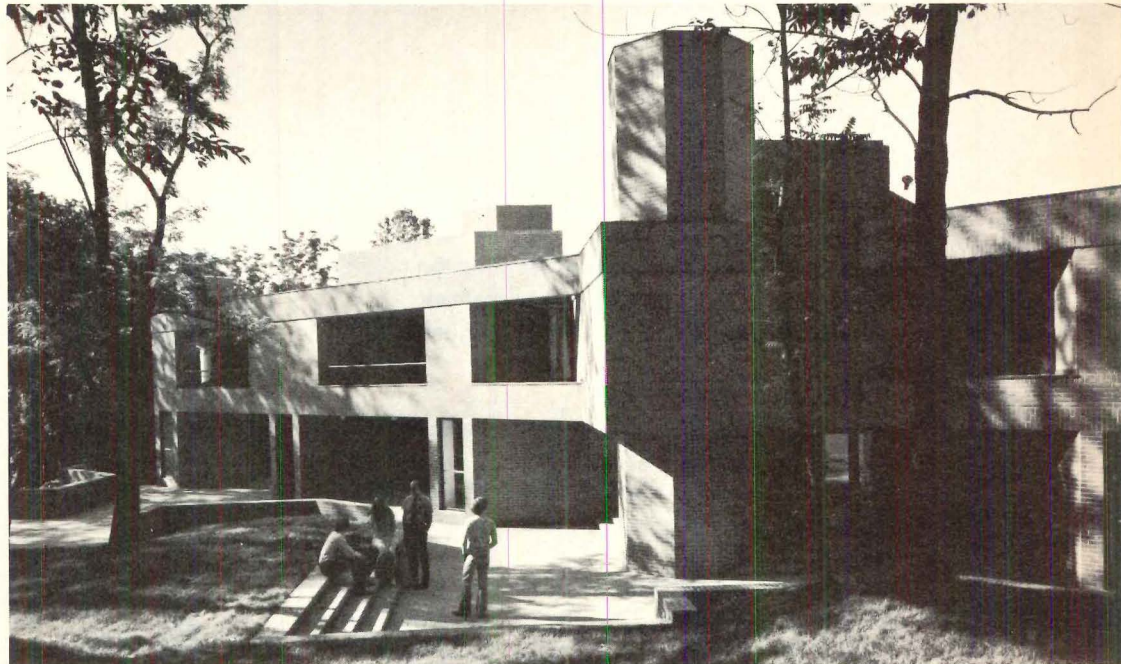
**Client:** Mount Vernon College.

**Photography:** R. Lautman, except top, p. 85, D. Kasamatsu.





In keeping with height restrictions in the desire not to overpower older campus buildings, the first phase unit of the new dormitory complex has been partially imbedded in the ground and stepped back on successive floors.





# Linear air diffusing systems

Max Corazza

**In this discussion on the design and application of linear air diffusing ceiling systems, the author reviews primary functions, air patterns and basic required data**

Linear air diffusers in conjunction with suspended ceiling systems were developed to help meet the need for modular flexibility and better interior environmental control. They also came into existence as a result of a trend toward integrated ceilings.

The linear air diffuser is a structural air bar channel that not only provides air distribution but also serves other functions in a suspended ceiling system. The basic element of one typical linear air diffuser is a one-piece extruded aluminum alloy that can be cut to any modular length. The cross section view is funnel-shaped and approximately 4 in. wide.

Most linear air diffusers have the following major elements: duct—usually fiberglass insulated for thermal and acoustical control; throat in the duct specifically designed as a sound trap; air extractor blades; air pattern control bar; linear air bar that also serves as a structural support for the ceiling.

Although a linear air diffuser system includes structural support for a suspended ceiling system, its most important function is to provide air distribution. Effective linear air diffusers provide patterns of low-velocity, conditioned air for draft-free air and uniform temperatures within the occupied zones. It is desirable that they have uniform outlet velocities along the full length of the channels, free of turbulence and eddies and ease of air pattern control at any point to achieve comfortable air balance.

Some linear air diffuser systems assist other functions in integrated ceiling systems.

**Lighting:** They help solve illumination problems, especially in ceiling systems that have heat-exchange luminaires, and allow more freedom in lighting design as well as higher illumination levels.

**Better acoustical control:** Linear air diffusing channels support acoustical tile, have fiberglass insulated ducts that effectively dampen airborne sound and provide adequate volumes



of conditioned air through the channel with minimum noise.

**Flexibility in the organization of space:** They have complete modular flexibility as all functions are complete in each module. This permits the architect to design any modular increment for the interior space, and building owners to change lease space sizes to suit tenant requirements without changing lighting fixtures and air distribution ducting.

## Various integrated ceiling systems

There are several designs for totally integrated linear air dif-

**Author:** Max Corazza is Product Manager, Interior Systems, Sunbeam Lighting Company, Inc., Los Angeles.



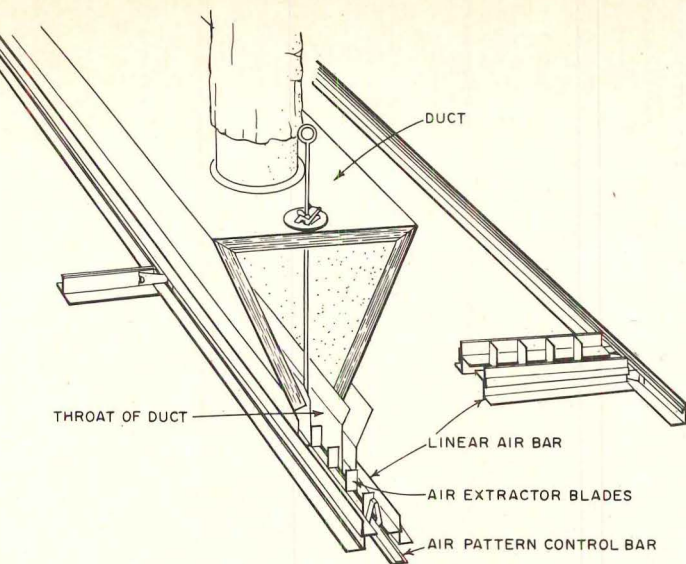


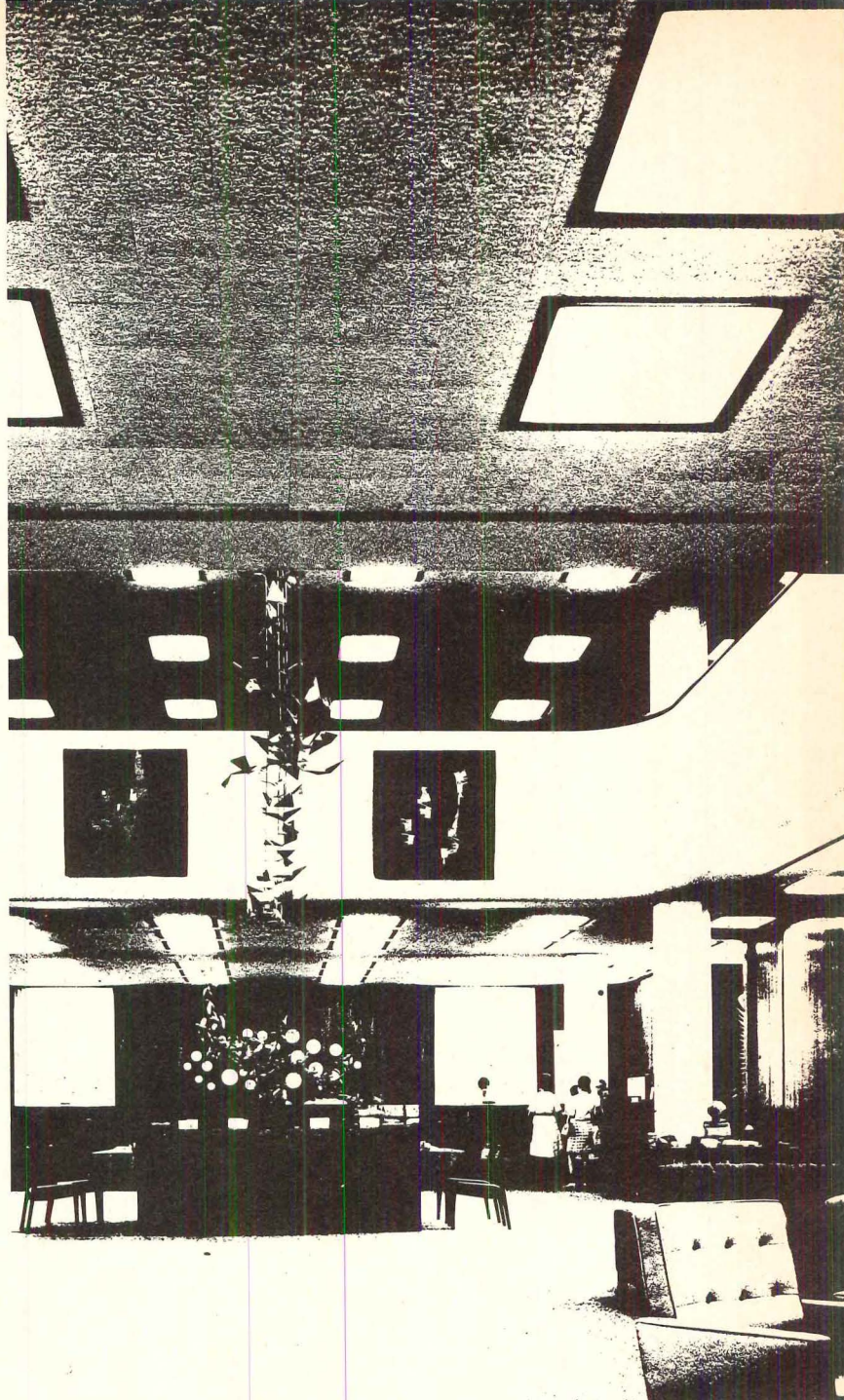
Diagram of a linear air bar with equilateral triangular duct and suspended ceiling components.



Using ceiling systems available. Each is created to suit architectural and mechanical conditions as indicated:

**1** A bi-directional, noncoffered design offers the architect one of the most flexible ceiling structures available, as its concept provides modularity and acoustical control for both present and future planning. Its suspended air distribution channels are its main structural components.

**2** A one-directional system offers a balanced environment for modest budget buildings, as it is an effective solution to the problem of providing optimum balance of the interior en-



Suspended modular ceiling installation combines wide-area luminaires with linear air diffusing bars. Air diffusers frame the lighting fixtures.

Typical installation of a 5-ft square bi-directional modular grid system with 18"x5'-0" combination heat exchange lighting fixtures. Widths of acoustical tiles and lighting fixtures are approximately equal. Air bars have special frames for modular accent.

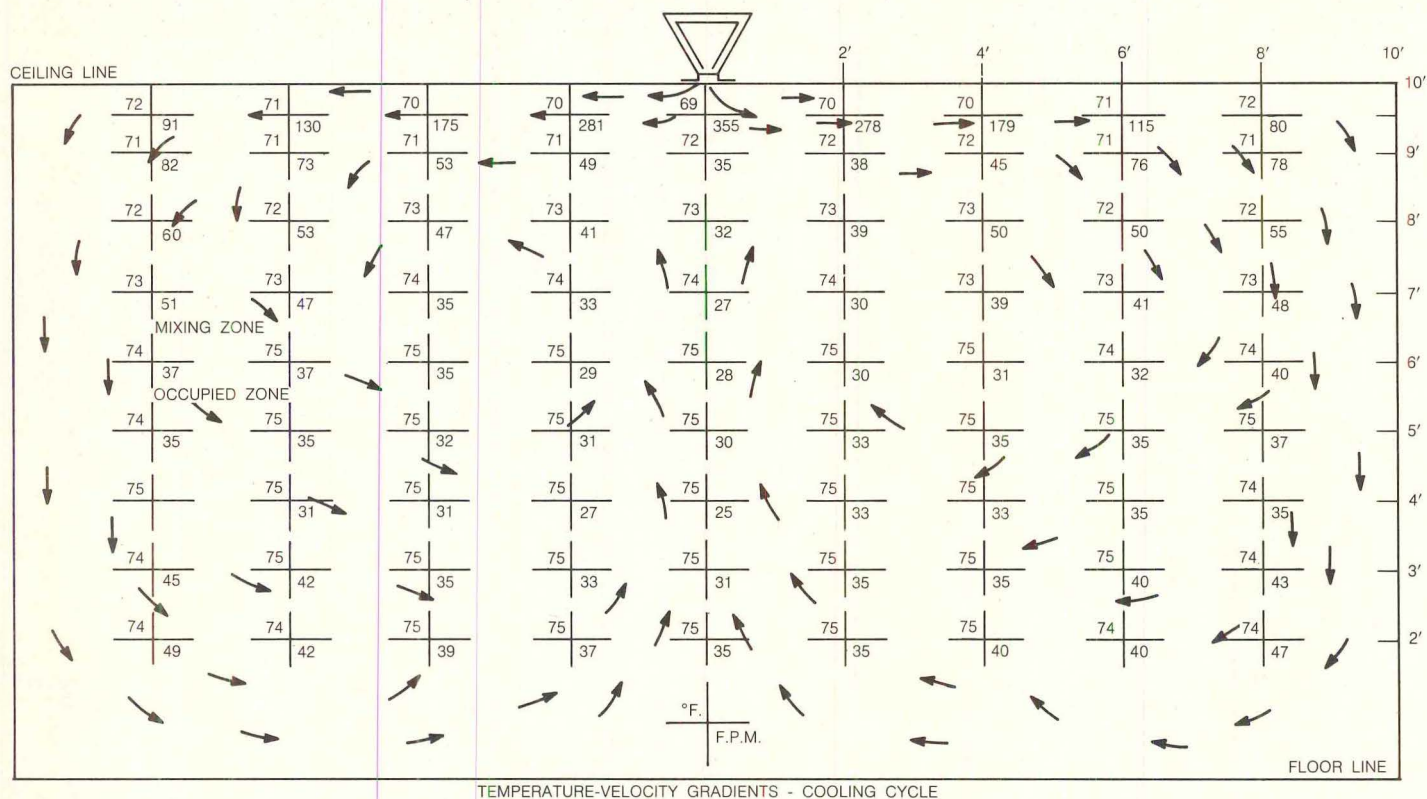
vironment. It is a coordinated lighting and linear air distribution system in alternating rows that allows modular flexibility and readily permits the relocation of movable partitions as floor plan requirements change.

**3** Large area luminaires have wide application from the single office space to large areas such as lobbies, atria, banks and public buildings. Centered in each module is a square luminaire surrounded and supported by the linear air distribution channels.

**4** A three-dimensional coffered ceiling system can combine



## Linear air diffusing systems



Temperature-velocity gradient chart illustrates performance of a two-way horizontal throw linear air diffuser system in a normal cooling cycle. Air volume required is 35 cfm per linear ft of air bar.  $\Delta T$  is 20 F.

the dramatic effect of a three-dimensional vaulted ceiling with the comforting benefits of three important environmental functions—illumination that is free of direct glare, uniform linear air distribution and efficient sound absorption. The coffer can be of any desired depth.

5 Wall-to-wall luminous ceilings, supported by linear diffusers, not only provide modular flexibility in both directions but also high quality, low brightness illumination.

### Air patterns

Air distribution flexibility and variable control of air patterns are of primary importance in providing comfort in the occupied zone. The ability to vary throw and direction of discharged air cannot be done easily with conventional air diffusers. In linear systems this is accomplished by the adjustment of the deflector control bar at any point along the diffuser. One of the most effective linear air diffusing systems provides a remarkably uniform air discharge throughout the full length of the diffuser—within 5 percent. Such design helps assure that the ASHRAE comfort standards can be maintained.

There are usually two types of directional control bars in linear air diffusers—the one-way and the two-way. Typical one-way throw control bars direct air patterns to one side only. Direction of pattern may be varied from horizontal to vertical. One-way air-flow is useful to clear room construction, to prevent bounce-back of air from walls or as window-wash diffusers.

When the two-way throw control bar is adjusted at its highest position, it directs air in a vertical pattern, providing an ef-

ficient way of directing warm air into the occupied zone during winter months, especially in high ceiling areas. Or, conversely, in a cooling cycle, it can be used advantageously in rooms with relative high heat loads. It may also be set for 60 degree patterns to the ceiling.

When the two-way throw control bar is adjusted at its lowest position, it directs air into a horizontal pattern. In so doing, air flows parallel to the ceiling from each side of the linear outlet for comfortable low-velocity distribution of conditioned air. This pattern is usually used in low ceiling areas and where heat loads are nominal.

### Basic data required

Each air distribution problem is different. The architect's design for a system and the selection of equipment must be based upon several inter-related factors that determine the performance requirements for each zone of a building. In totally coordinated systems, careful consideration must be given to the architectural, acoustical, mechanical and electrical requirements to achieve a balanced and comfortable interior environment. Installation and maintenance economics are also important considerations.

Generally, the basic information that the architect needs to design and lay out linear air distribution systems is: size and use of each area and ceiling heights; modular plan for each floor; allowable noise level; total air volume to be delivered to each area or volume per sq ft; cooling and heating requirements and maintained room temperature; illumination levels and type of lighting equipment.



# Rapid transit: the future has begun

Charles W. Lerch

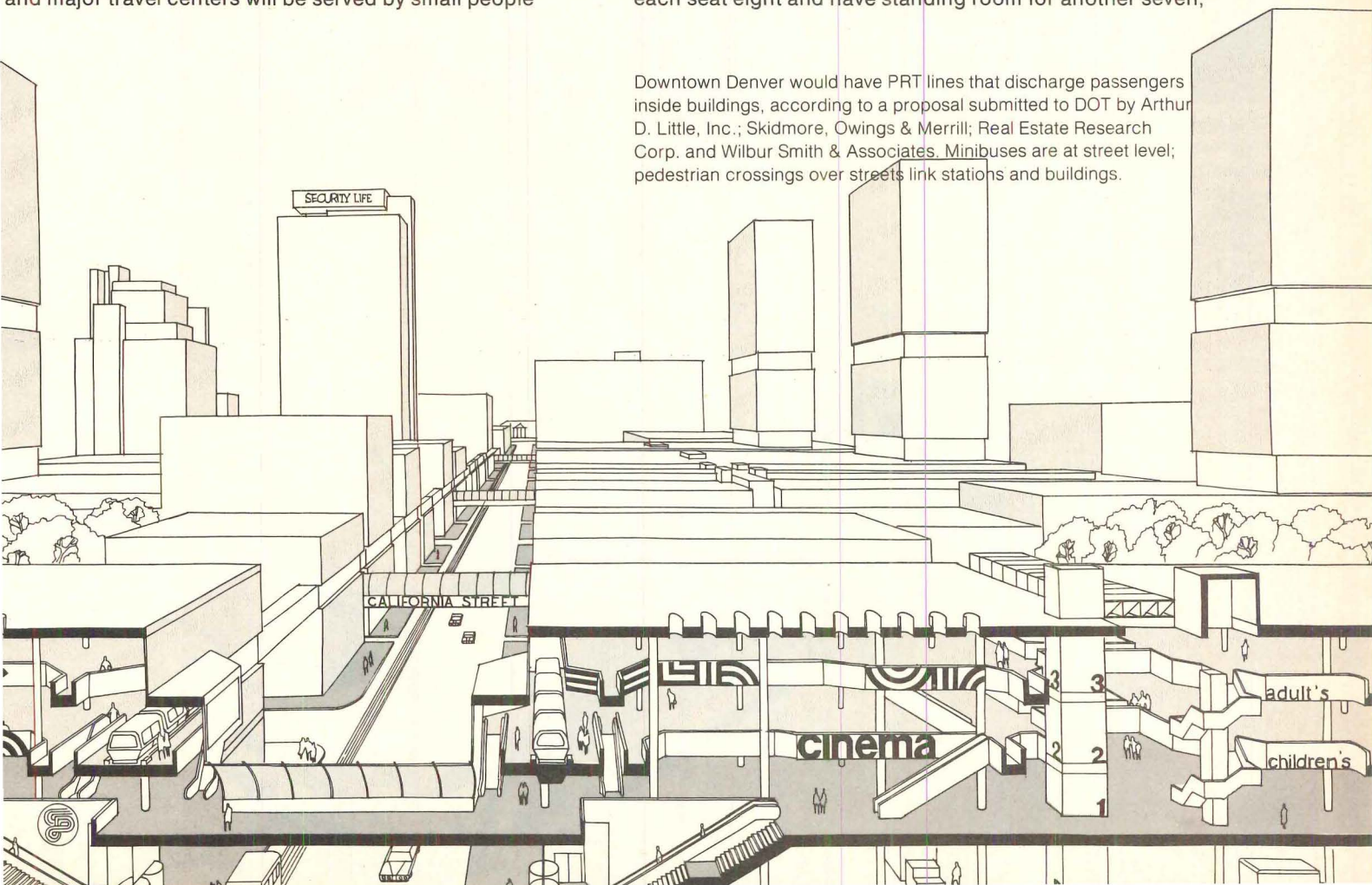
**Rapid transit systems that combine the best features of personal vehicles and pushbutton elevators are no longer just a promise; several are being built right now**

During the past decade, scientific research and technology have been applied to the problem of urban transportation and the solutions will not only modify our existing streets and buildings, but dictate new concepts for future plans. Shoppers will travel to and from stores in mini-buses or people capsules. Middle city and suburban residents will reach the inner city on computer-controlled highways where vehicles can move close together with safety at high speed. Office buildings, educational, government and professional facilities and major travel centers will be served by small people

movers (3 to 6 passenger vehicles) that will take over much of the automobile traffic. Suburban commuters and shoppers will enter the city in high-speed mass transit vehicles running under the city streets or along elevated lines. Freight traffic will be moved below ground by day, or by the people mover vehicles by night, or both.

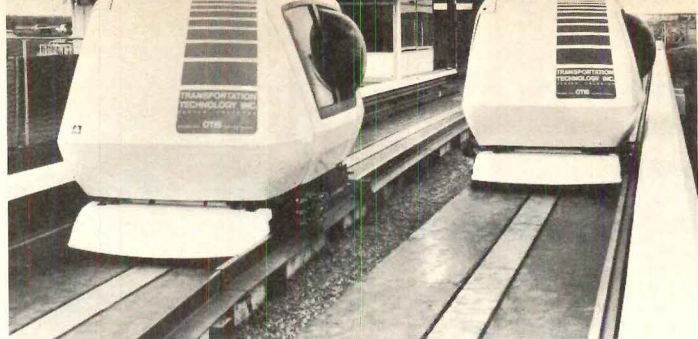
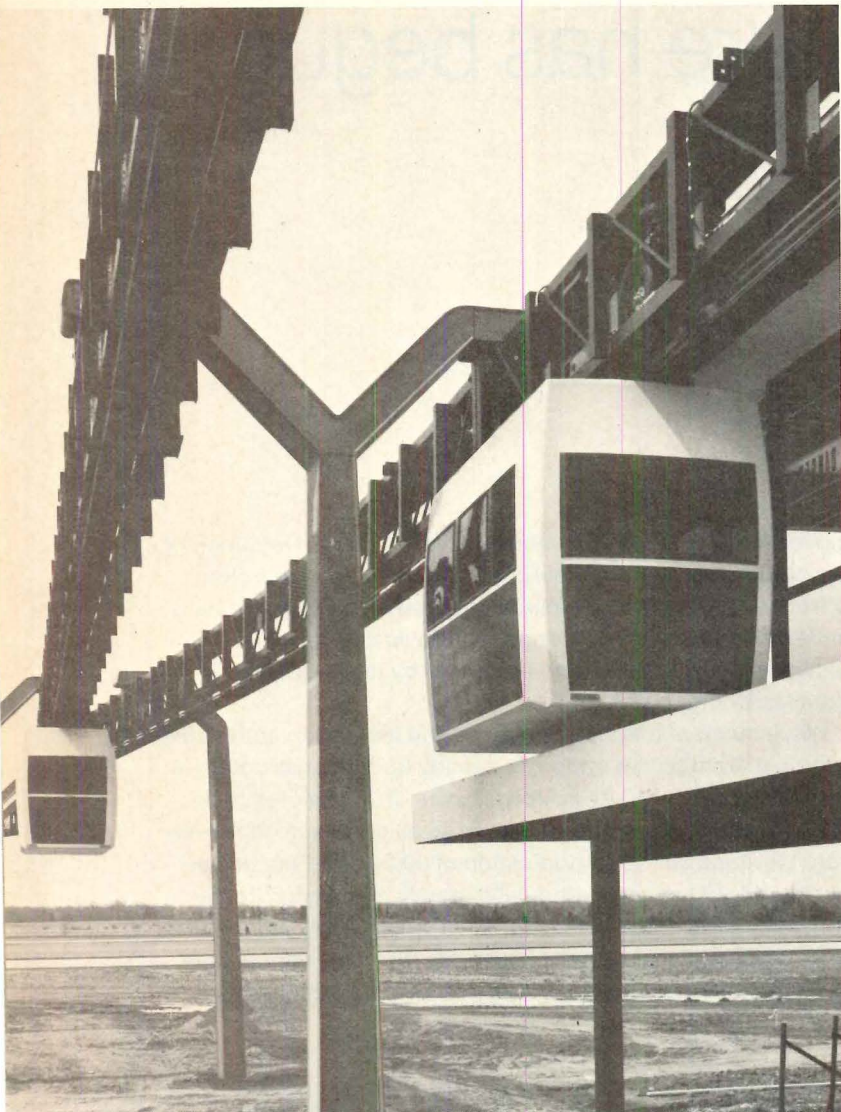
While much of this is in the future, the first urban automated personal rapid transit system is already under construction at West Virginia University in Morgantown. It is expected to be the forerunner of similar projects in small cities across the nation. Morgantown has a population of 29,000 and the university has 16,000 students and 6000 faculty members. Six stations and a two-track guideway 3.5 miles long will link the three university campuses and the city. The 100 vehicles will each seat eight and have standing room for another seven;

Downtown Denver would have PRT lines that discharge passengers inside buildings, according to a proposal submitted to DOT by Arthur D. Little, Inc.; Skidmore, Owings & Merrill; Real Estate Research Corp. and Wilbur Smith & Associates. Minibuses are at street level; pedestrian crossings over streets link stations and buildings.

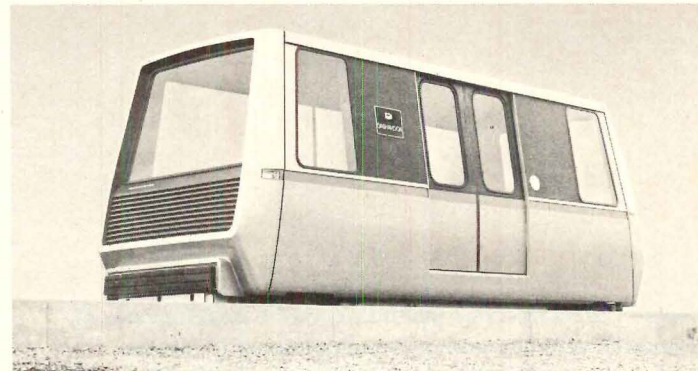




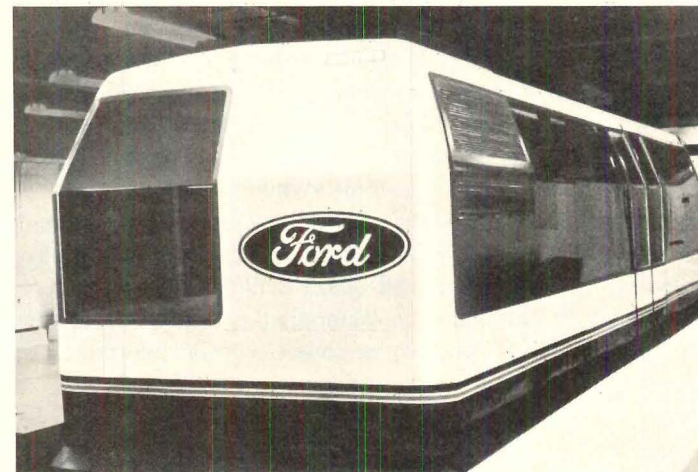
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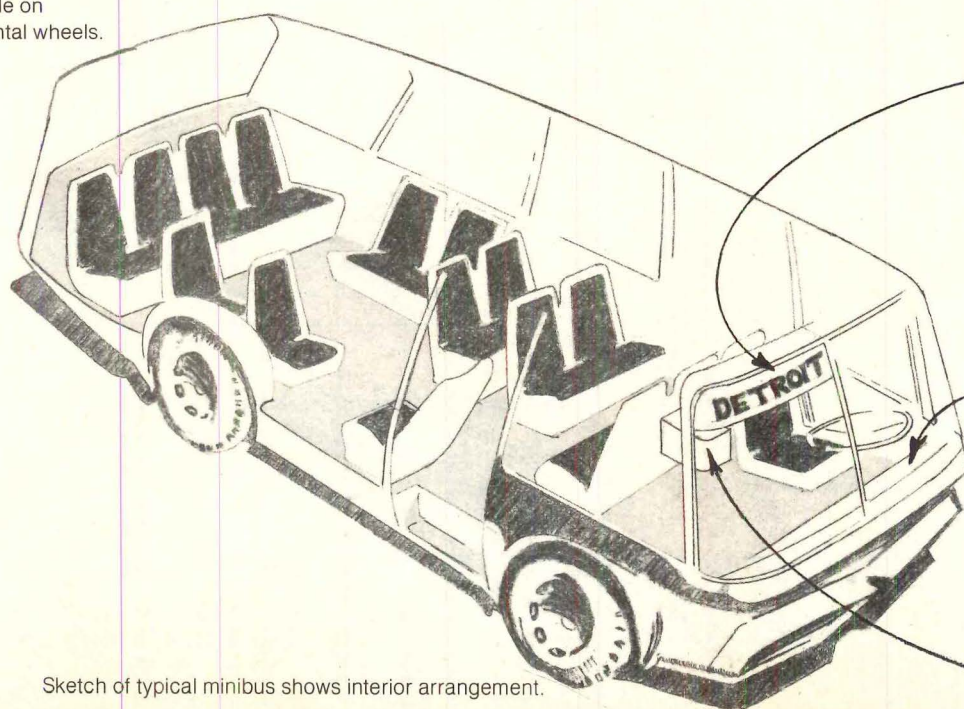


3



4

Four PRT systems were installed at TRANSPO 72, international exposition held last month at Dulles Airport. **1** Rohr-Monocab monorail with two 6-seat molded plastic cars; **2** Transportation Technology, Inc. air cushion cars propelled by linear induction motors; **3** Bendix-Dashaveyer aluminum-fiberglass vehicles with horizontal guidewheels; **4** Ford vehicle on aluminum guideway also with horizontal wheels.



Designation sign viewed by passenger from inside

Automatic route controller system

fare collection



## Rapid transit: the future has begun

they will be rubber-tired with electric motor drive, run at 30 mph and handle 1100 passengers in 20 minutes. Computer controlled during rush hours, the vehicles will also be directed to stations by pushbuttons, just like elevators. The Boeing Company's Aerospace Group is designer and manager of the project, with Alden Self-Transit Systems Corp. as subcontractor for the vehicles. Cost of the project, funded by the Department of Transportation as a demonstration, has been \$153,000 for the feasibility study, \$1.3 million for research and engineering with total development costs projected at \$24 to \$30 million.

### Interim improvements

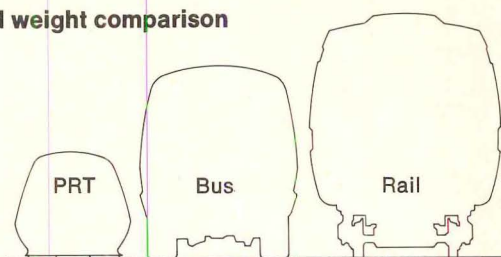
Although Personal Rapid Transit systems such as the Morgantown one will inevitably bring a new dimension to our transit systems, most transit improvements in the near future will probably be done on a gradual basis. This will entail improving all existing facilities: more buses that are faster, more comfortable, cheaper to operate and maintain and less costly to the passenger. Feeder buses providing express service from suburbia to inner-city transfer points. Increased bus routes and schedules. Shuttle busing to peripheral parking. One-way street plans. Staggered working hours to relieve peak jams. Moving freight at night. Improved conventional transit such as that in New York, Chicago and San Francisco. improved vertical parking facilities. Separate bus lanes in the downtown area.

The nation's newest mass-transit rail system, San Francisco's Bay Area Rapid Transit (BART) serves four major suburban areas with 75 miles of track and 38 stations. It provides express service in express zones, similar to elevators in high-rise buildings, with a capacity of 70 passengers in each car. Most of these passengers, however, must be picked up at the terminal by taxi, bus or street car to complete their trips. In addition to being time-consuming, inconvenient or costly, this hardly presents a palatable option to using the system instead of the automobile. It is estimated that when completed, BART will handle only 3 percent of the total passenger trips in the three counties. Thus it can have little effect upon bridge and freeway traffic, downtown parking, air and noise pollution.

Elsewhere, express bus service from outlying suburbs to inner-city terminals has produced some favorable results. Begun in 1969, the Shirley Highway express between Virginia and Washington, D.C. has increased from 1900 to 5900 riders per day while traffic entering the city has decreased by more than 30 percent—a significant statistic even though the reduction includes other factors. Some 290 buses are in use, and the trip time has been reduced 30 minutes. Similar service is planned for San Bernardino-Los Angeles (11 miles, 100 buses, 4000 passengers). Express busing, however, does not solve the terminal and dispersal problems, and merely transfers the parking problem to the suburban terminal.

"Dial-a-Bus" services are being tried in several areas. Users request service by telephone and the buses are routed by computer from door to destination. These buses are small, carrying 10 to 16 persons, with plush bucket seats, carpeted floor, low and easy entrance, air conditioning and no crowding. Dial-a-bus will play an important part in developing true Personal Rapid Transit systems. With such feeder services,

### Vehicle size and weight comparison



	PRT		Bus	Rail
Car wt. in lbs. per passenger	200	300	700	800-1000
Lbs. per foot of track (empty)	130	190	700	800-1000
Lbs. per foot of track (loaded)	220	290	1050	1330
	Passive		Active	

**Table 1 Transpo '72 transit demonstrations**

	Ford	Bendix Dashaveyor	Rohr Monocab	TTI Otis
Vehicle —				
Total:	24	31	6	6 10
Seated:	12	12	6	6 —
Standee:	12	19	—	10 —
Support:	Pneumatic tube	Foam-filled tire	Pneumatic	Air bearing
Propulsion:	Dual DC motor AC distribution	DC motor AC distribution	AC induction	AC linear induction
Guideway:	Elevated bottom channel	On grade channel	Elevated top mono rail	On grade bottom channel
Stations —				
On line:	1	3		
Off line:	1	3	1	1
Switching:	On vehicle	Guideway vertical	On vehicle	On vehicle
Headway —				
Major system:	8 to 2 seconds	8 to 4 seconds	30 to 37 seconds	15 to 10 seconds

**Table 2 Relative costs** (rail at 100%)

Relative costs per seat			
	PRT	Bus	Rail
	44%	36%	100%
Relative costs, guideways			
Elevated	50%	85%	100%
Tunnel	120%	275%	300%
On grade	15%	5%	10%

**Table 3 Cost comparison, existing systems**

BART	(dual-rail transit) \$17 million per mile
Washington, D.C.	(dual-rail mass transit) \$30 million per mile
Morgantown PRT	(elevated 2-track structure) \$10 million per mile

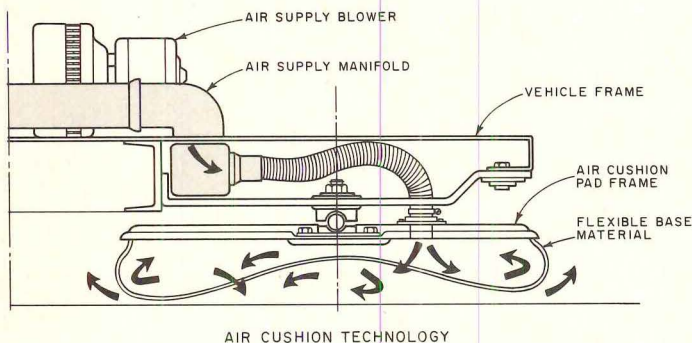


## Rapid transit: the future has begun

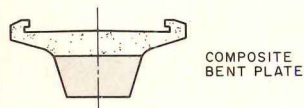
PRT lines may be placed up to three miles apart and still provide a total house-to-destination time equal to that of an automobile. As the PRT network develops, the need for dial-a-bus will be reduced to more local services.

### The new technology

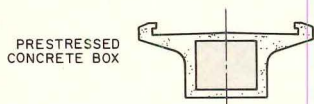
In 1967, the U.S. Department of Housing and Urban Development engaged 24 contractors to help plan a research and



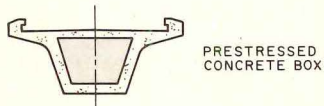
AIR CUSHION TECHNOLOGY



COMPOSITE BENT PLATE



PRESTRESSED CONCRETE BOX



PRESTRESSED CONCRETE BOX

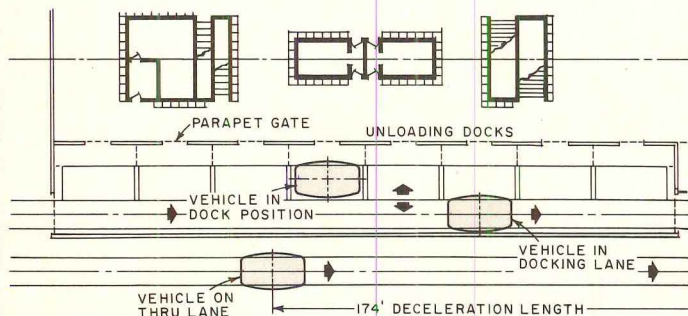


PRESTRESSED CONCRETE DOUBLE TEE



COMPOSITE CURVED PLATE

GUIDEWAY CROSS SECTIONS



Drawings from Transportation Technology Incorporated show how the air cushion principle is applied to its PRT vehicle, which can move laterally for docking to leave guideway free for through traffic.

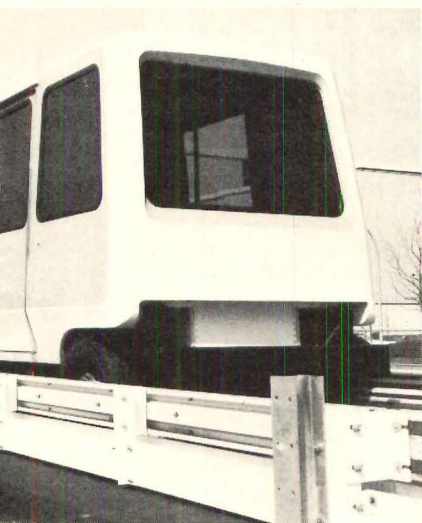
development program for future urban transportation systems. Between \$3 and \$4 million were spent on some 35 reports. Of the several systems studies, those termed PRT by HUD showed the greatest promise. Other terms for these people movers are horizontal elevators or horizontalators. Because of their low profile, small size and light weight (3000 lbs), they can connect with buildings at the elevator lobby, bringing the goal of integrated vertical and horizontal transportation one step nearer. PRT advantages include operation on an exclusive right of way, full automatic computer control and vehicle management, door-to-door nonstop service, improved passenger accommodations and safety, and a great reduction in pollution caused by existing cars. The service would be just as acceptable, and in some situations preferable, to the automobile. Vehicles will not be used just once by a single passenger and then parked all day; instead, they will accommodate several people at a time and be kept continually in use all day. This would certainly alleviate the downtown parking problem in cities such as Denver where, according to the Department of Transportation (DOT), more than half the 28,000 parking spaces are filled by single-rider vehicles. Other specific applications of PRT would be circulation within large airport complexes, ground extension of air transport and transportation from one part of an urban area to another.

### On display

From some 100 designs now competing for recognition, four were chosen to participate in the International Transportation Exhibition of 1972, held in May at Dulles International Airport near Washington, D.C. Three separate types were shown: monorail, rubber-tired electric motor drive and air cushion with linear induction. Table 1 shows the operational parameters for each of these systems.

From an aesthetic and architectural point of view, the air-cushion linear induction system requires much less guideway than rail or bus, and vehicles can be easily docked in a minimum of space. It is also light enough to run into existing buildings. The Rohr monocab has the advantage of a monorail, can turn on a sharper radius and requires a narrow, less costly guideway. It also provides the best protection against adverse weather. The Bendix and Ford rubber-tired vehicles use a drive system which, after many years of development, has a high degree of redundancy for dependability under all weather conditions. The Ford Motor Company is also developing a system which would use a common guideway for private passenger and freight automobiles and dual mode buses. All, when on the guideway, would be under automatic computer-guided control. When not on the guideway, the private automobiles can be driven anywhere. A disadvantage of this system is that the structure must support loads several times that of a PRT system. Consequently it costs more and poses more difficult aesthetic design problems. An advantage of the common guideway system is its convenience, since it would provide complete origin-to-destination service without transfer to PRT, yet the private vehicles would still require downtown parking. The dual-mode vehicle will require a very dependable, sophisticated control mechanism, as it is to be used both as a private vehicle (where maintenance will de-





One way to integrate personal rapid transit with architecture is proposed by Transportation Technology Incorporated, above. Vehicle at left is being tested for the Morgantown, W. Va., system designed and managed by the Boeing Aerospace Group.

pend on the private owner) or as a quasi-public vehicle moving on a public automated guideway control system. To avoid delays caused by vehicle stalls, pallets might be used for the dual-mode vehicle while on guideway operation.

#### Where the money is coming from

Congress in 1970 approved a 10-year \$12 billion funding program for the Secretary of Transportation with \$3.1 billion to be obligated for the first five years. It also authorized the Urban Mass Transit Authority (UMTA) to spend \$900 million in 1972. The Department of Transportation has authorized \$12 million for research and development of the dual mode vehicle and has also funded the four Expo '72 exhibitors with \$1.5 million each: Bendix-Dashaveyer, Ford, Rohr Corporation and Transportation Technology-Otis. In addition DOT funded the Morgantown project and has contributed \$50 million of the \$1.4 billion that the BART project will cost. Other smaller grants are for dial-a-bus programs in Columbus, Ohio and other Model Cities.

Public as well as industrial funds have gone into projects such as Tampa Airport, \$4 million by Westinghouse; Dallas-Fort Worth Airport, \$35 million for 10 miles by Airtrans; the Shirley Highway express bus line. Advanced PRT systems are now being planned for Pittsburgh, Atlanta and Miami. DOT is also funding a large test laboratory in Pueblo, Colo. where \$3.3 million has already been obligated and total costs might go to \$150 million. Metro and turbo trains for the northeast corridor are also federally funded.

Other countries are perhaps ahead of the U.S. Germany has spent \$10 million on the Kaus Maffi 400 mph vehicle that is suspended by magnetism and driven by linear induction motors. The vehicle was tested last winter. Another German firm, Messerschmitt-Bolkow & Blohn, is also developing a high-speed vehicle with government funding of more than \$3 million.

England has built a 1¼-mile test tract for air cushion linear induction vehicles, and spent \$10 million on development by the firm of Shepard Hill. Japan and France are also spending millions of dollars on vehicles.

In Canada, Edmonton has a dial-a-bus system for the entire city and Vancouver is planning to spend \$400 million on an

advanced rapid transit system, of which \$100 million is for right-of-way purchase. This system will be 80 miles long, one way, and carry 130 million riders a year at 25¢ a ride.

#### Performance vs. cost

A quick review of the performance and cost figures of a typical and projected urban transit system reveals that:

The PRT system cost per passenger seat is less than half that of dual rail, and only a slight fraction higher than current bus costs.

PRT guideway costs are cheaper by half than an elevated rail system, and cheaper by one-third than the bus system. In tunnels, PRT guideways are about two-thirds cheaper than either rail or bus. (Chart 2)

While the private automobile, local bus and, in large cities, rail transit will continue to have an important role in the urban transit system, they must give way to the new techniques of PRT and dial-a-bus systems. Architects and planners must begin now to account for this in their concepts of metropolitan buildings and clusters. Notions about access to buildings from surface or subsurface transit have to be re-evaluated. The lightweight characteristics of the linear induction, air-cushioned systems, for example, will permit cars to run right into the lobbies of banks, hotels and office buildings.

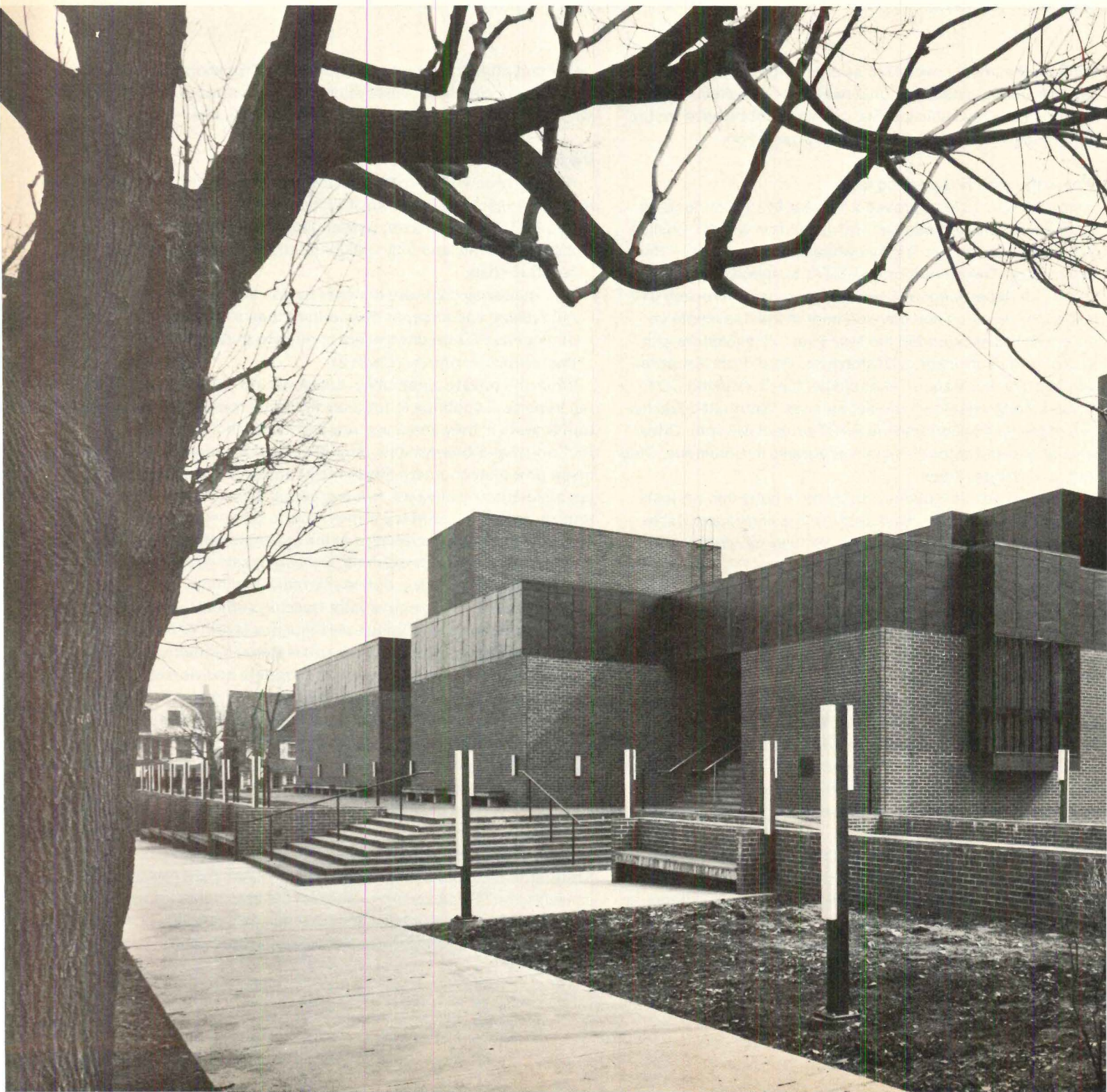
The possible integration of intra-building vertical transit systems with horizontal transit will influence layout of elevator shafts, escalators, loading docks and material handlers. A viable city center in the future will get shoppers and workers only by providing them with clean air, rapid and responsive transportation and aesthetic tranquility. This can be done through a concerted, coordinated effort on the part of urban planners, architects, horizontal and vertical transportation engineers and political decision-makers.

**Author:** Charles W. Lerch is president of Lerch, Bates & Associates, Inc., elevator consulting engineers who are now also consulting on PRT systems. For much of the data in this article, he wishes to acknowledge the work of Albert James Sobey of Booz-Allen-Hamilton and Howard R. Ross, transportation consultant.



Hall of Science, Moravian College

# The art of building for science





**Three science departments share lecture facilities in one compact building designed so that a small liberal arts college could accommodate its changing curriculum**

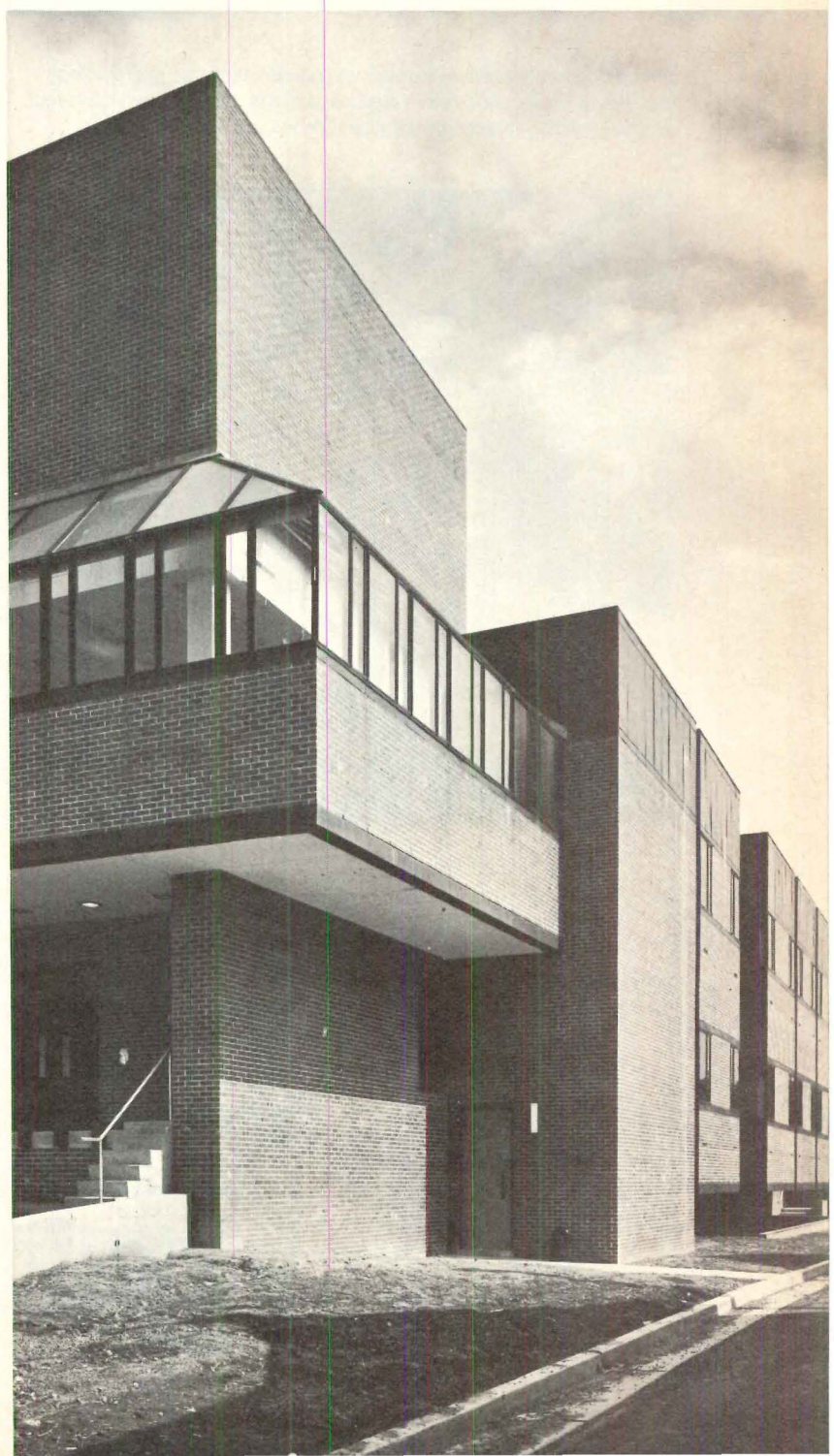
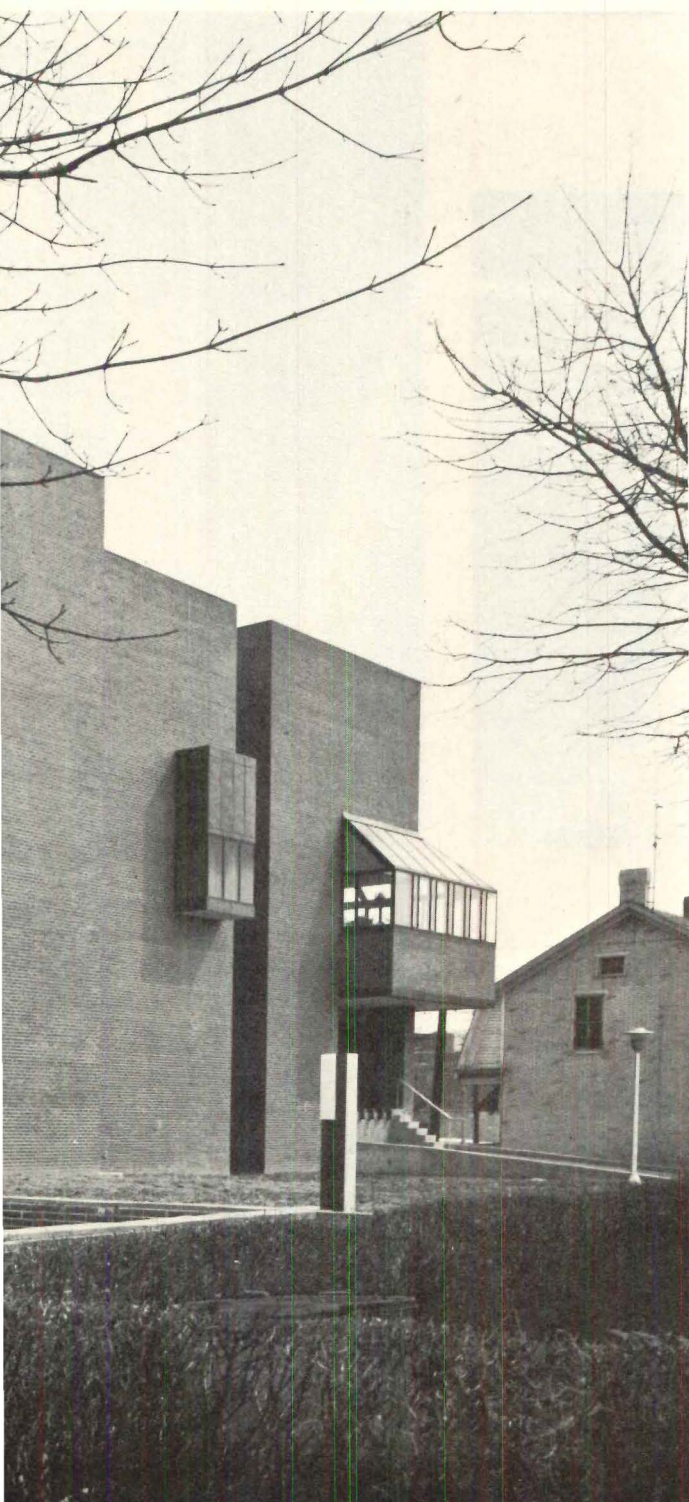
Moravian's Hall of Science is the architects' response to a new curriculum, an intention to double the number of science majors while giving liberal arts majors a more thorough background in the sciences, an increase in faculty and a program of independent research projects by both faculty and students. As a small, traditionally liberal arts college in Bethlehem, Pa., Moravian required as flexible a building as possible to house its as-yet-indefinite requirements.

Outwardly, the building is a response to the problem of expanding the campus into a residential neighborhood. Inside, for flexibility, its laboratories and classrooms are defined by relocatable, nonbearing block walls and its mechanical ser-

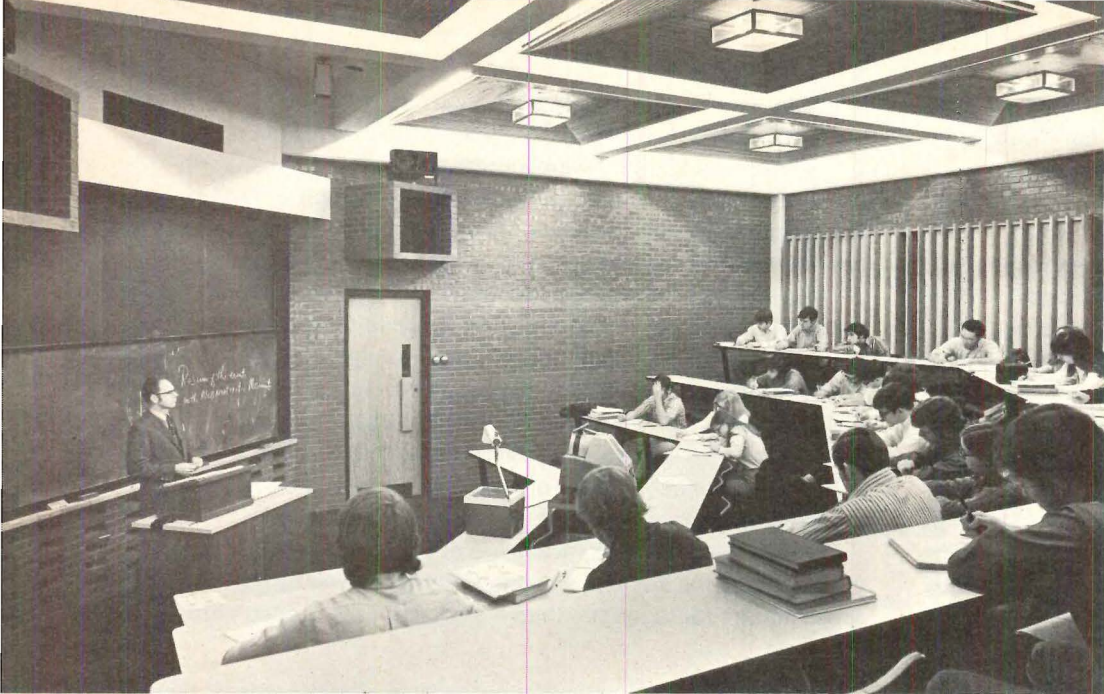
vices are clustered into central vertical shafts.

The planning team, which included Educational Facilities Laboratories consultants and laboratory planning consultant, Burgess Standley, as well as The Nolen & Swinburne Partnership, architects, first blocked out the separation of departments—one floor each to physics, chemistry and biology. Shared spaces—main entrance, lobby and two lecture halls—are given a first floor wing. Next came a schematic decision that put teaching labs and research labs on either side of a central space occupied both by preparation areas and mechanical service shaft/corridors. The circulation corridor runs around these lab spaces; offices, periodical libraries and stairs are at the perimeter. Toilet rooms, one elevator and one set of stairs are in a "core" at one end of the structure.

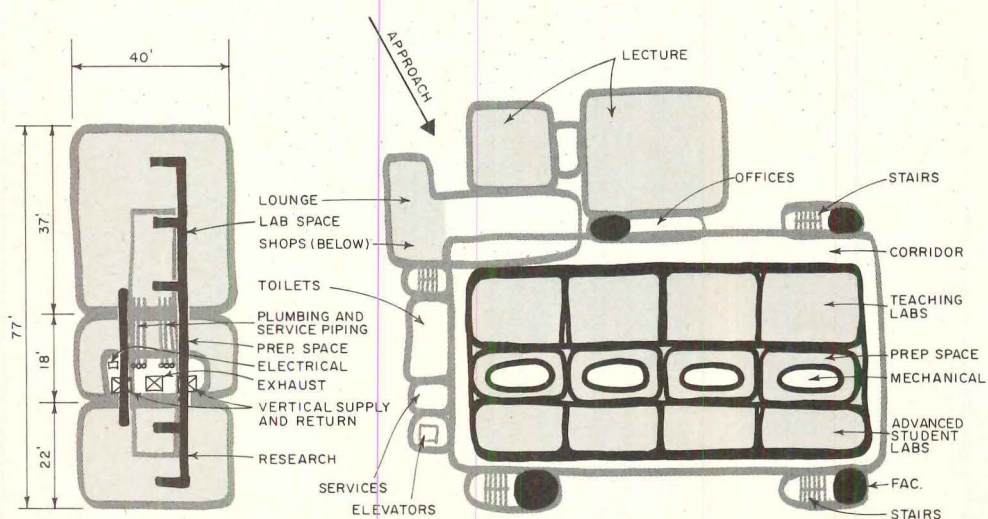
Because the laboratory areas are not split by corridors, the mechanical runs are kept shorter, yielding a lower net-to-gross square footage ratio than a typical double-loaded corri-







Three departments share lecture hall (above); labs, like microbiology lab (below), have windowless walls for storage. Corridor and lab layout (bottom) allows vertical mechanical runs in central shafts (right).





## The art of building for science

door scheme. Having vertical utility runs concentrated in large central shafts not only makes for efficiency but allows future changes without hampering existing facilities. Plumbing loops, air distribution and exhaust systems service the total laboratory block and were zoned rather than designed for each specific space. Thus, should chemistry majors, for instance, outnumber the others, their department can expand into the other floors with relatively minor changes.

For flexibility, the interior concrete block partitions are separated from the primary reinforced concrete structure, and the ceiling and lighting systems are on a grid that allows for easy change. The laboratory furniture was specially designed so that units may be "unplugged" and relocated.

Laboratories, which do double duty as class and recitation rooms, have no windows. This leaves maximum wall space for work areas, racks, instruments and storage.

The lecture halls are equipped with the full range of audio-visual aids, a continuous writing surface for each row of seats and necessary services for "live" demonstrations. The two halls, plus a seminar room, provide what the college calls its "scientific community" with a conference center. [RR]

### Data

**Project:** Hall of Science, Moravian College, Bethlehem, Pa.

**Architects:** The Nolen & Swinburne Partnership.

**Program:** provide teaching and research facilities so that a small liberal arts college could double the number of science majors as well as increase emphasis on science for nonmajors.

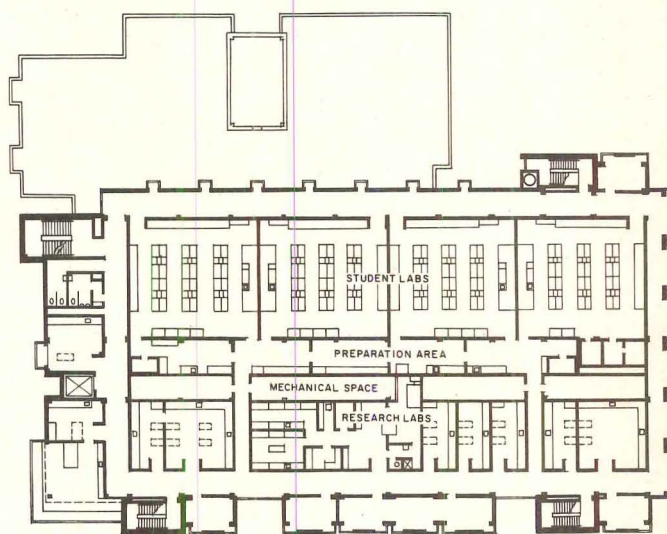
**Site:** 1.13 acres at edge of campus bordering residential area.

**Structural system:** reinforced concrete.

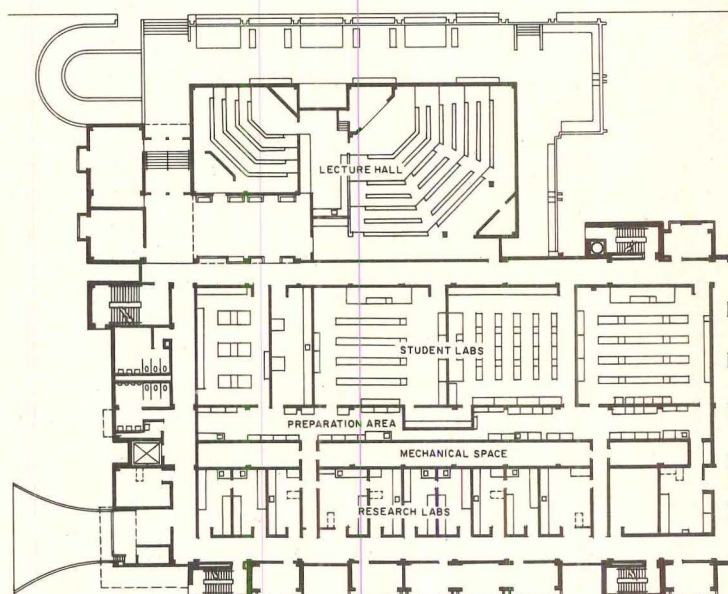
**Major materials:** dark red brick and slate exterior; anodized aluminum sash; brick interior, concrete block partitions (nonloadbearing), rubberized plastic flooring, resilient tile, carpeting.

**Costs:** \$3,358,000 including laboratory equipment, site work except landscaping; \$46.75/sq ft.

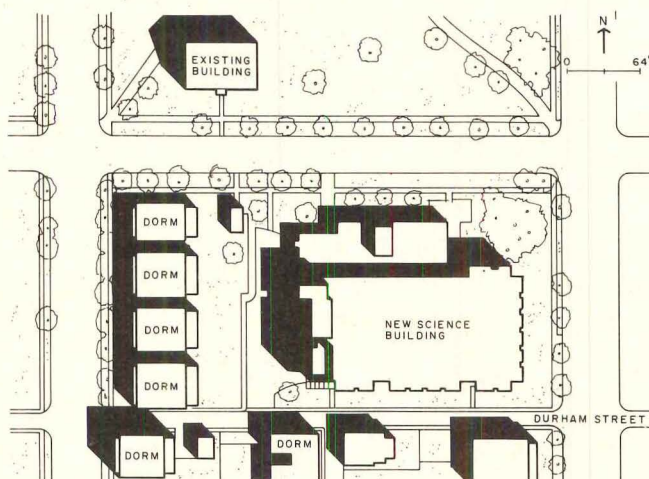
**Consultants:** Educational Facilities Laboratories; Burgess Standley, laboratory planning; Clarke & Rapuano Inc., landscape; L.S. Goodfriend & Associates, acoustics.



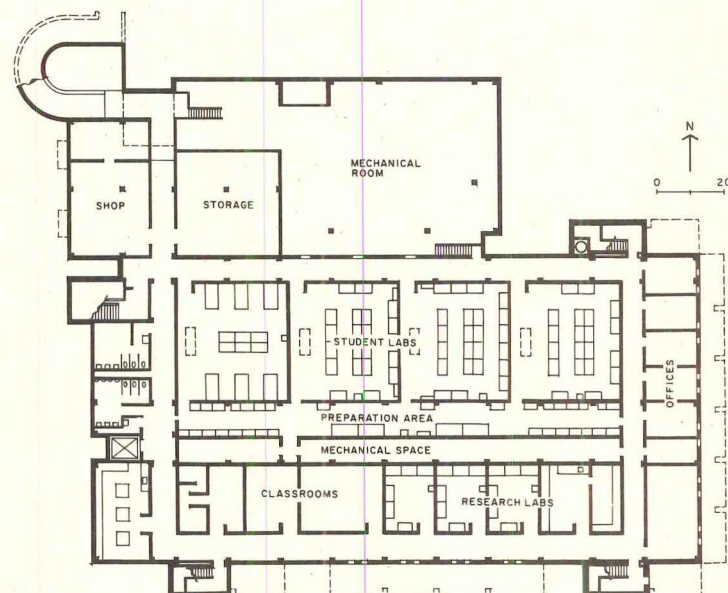
THIRD FLOOR PLAN



SECOND FLOOR PLAN



SITE PLAN



FIRST FLOOR PLAN



# Is architecture unfair to architects?

**Not all architects are self employed: many work for other architects. It is these and other professional employees who are just now finding a voice for their complaints in a growing labor movement discussed in this article, the second of a P/A series dealing with office management**

Picket lines at construction sites are nothing new, but the line that showed up in February at the groundbreaking for an Oakland, Calif. bank was different. Its dozen picketers were members of the Organization of Architectural Employees, and their signs read: "OAE protests Van Bourg/Nakamura unfair labor practices."

Unfair labor practices—that's a charge no architectural firm ever expected to face. It's something from the same lexicon as strikes, walkouts and scabs, something labor unions worry about, certainly not a problem for the architectural profession. Yet there were those 12 people, carrying their picket signs, all because one of their number had been fired, they said, for his union activities within the firm. It wasn't a strike, just an "informational" picket line, according to OAE; the real action consisted of filing unfair labor practices charges with the National Labor Relations Board.

The incident itself, and the actions that followed it, taken separately or together, are no big thing. But they signal growing militancy on the part of some architectural employees and a more widespread pressure to improve employment practices throughout the profession. Whether in San Francisco, where OAE has been operating since early in 1969, or in New York, where the Architectural and Engineering Guild, a local of an AFL-CIO union has organized one firm, or in Detroit, where a group known as Architectural and Engineering Employees has been building membership, the concerns are the same. A paragraph from a pamphlet put out by AEE sums them up this way:

"Our pay scales are on the whole substantially less than most building trades, where electricians, plumbers and others earn well over \$10 per hour. Few firms offer genuine job security, adequate retirement or pension plans, fixed promotion schedules, proper health and disability benefits, sick leave and other essential fringe benefits. Few architects and engineers have any voice in the conduct of their duties."

The same piece of literature gives a good rundown of po-

tential union members: architects, engineers, surveyors, designers, planners, researchers, programmers, analysts, field engineers, construction supervisors, estimators, specification writers, technical processors, draftsmen, apprentices. The list includes a few people not found in architectural offices because AEE covers a fairly wide spectrum of firms, including design-build firms, contractors, manufacturers and sales-engineering firms, along with architectural and engineering firms. The Architectural and Engineering Guild has just about as broad a list of eligible members, and the Organization of Architectural Employees is a bit more specialized. The important qualification common to all the unions is that potential members are not part of management or do not hold a degree of ownership in the firm; that question is usually resolved on a firm-by-firm basis.

## **Salaries, benefits, recognition**

Somewhat boiled down, the employees' concerns are salaries, fringe benefits and professional recognition—three problems deeply rooted in the nature of the profession itself.

Consider salaries: they are generally acknowledged to be low, but nobody knows just how low. There has yet to be a national study of salary ranges in architectural firms, although there have been some local ones. Even the Organization of Architectural Employees admits to what it says is a good example of a statistical paradox in its 1970 profile of architectural employees in the San Francisco Bay area. Their profile quotes a *New York Times* story about wage raises in the construction industry which said that while hourly rates were up, annual earnings average only \$9000 a year. OAE pointed out that the union members mentioned in the story earn around \$3 more per hour than architectural employees, but make less per year. Then the profile asks the key question: "What is a good index for economic comparison for architectural employees? Should we use other professions? Other parts of the construction industry? The national average?"

OAE's own salary guidelines, which are designed to take into account education, registration and experience, range from an hourly rate of \$4.03 for a beginning draftsman to \$9.32 for a project architect; AEE's salary scale, which parallels OAE's, calls for \$5 and \$11.30.

What's interesting is that everybody agrees about salaries. Published salary guidelines from architectural and engineer-



ing societies recommend higher salaries than the fledgling unions have written into their programs. "We're not bashful," says AEE secretary Matthew Connor, "but we're reasonable."

Connor has put his finger on the problem: everybody may agree that salaries are low, but there is only so much that can be done to improve them. Salaries are very closely related to the amount of money coming into the firm, an amount that is not rising at the same rate as the firms' costs have been in recent years. To really change the salary structure might out of necessity involve changing the way firms are paid for their work, a conclusion reached by the California Council AIA in studying the OAE salary document. CCAIA executive committee is now studying a new compensation document put together by one of its committees. According to Walter Costa, the committee that wrote the document thought seriously of recommending that "compensation be based upon direct personnel expense and not on a percentage of contract method." It was their belief that "this system will provide a method of compensation which is more responsive to the need to improve employees' salary levels."

#### **Benefits: portability important**

Fringe benefits are just as dependent on available money as salaries, and the deficiencies are as equally rooted in the structure of the profession. It is only the larger firms that can provide substantial benefits programs; an architectural firm with three to five employees is hard put to do much of anything at all about life and medical insurance, pension plans and other benefits. In addition, employees are extremely mobile, but benefits aren't. Thus, every time an architectural employee changes jobs he gives up his insurance benefits and pension contributions, assuming he had them to begin with, and starts all over again at his next job.

Providing portable benefits is probably just as important as providing greater benefits, and perhaps more difficult. The current choice is between private benefits programs that are beyond the reach of many who could most benefit from them.

The problem with the AIA insurance programs is their voluntary status, and the fact that they are individual programs. AIA can't require its members to join them, and it can't require firms to pay for employees' participation, for fear of running afoul of antitrust laws. If AIA required member firms to join the programs, paying for their employees, goes the expla-

nation, the firm would then pass the cost on to clients, and AIA, in effect, would be helping to set fees in violation of anti-trust legislation. A union, on the other hand, can do just what the AIA can't: require, through a negotiated contract, that employees receive a given amount of fringe benefits—insurance, pension plan, etc.—with the employer bearing the cost.

Professional recognition, the third area of concern for the union, is considerably less tangible than a higher salary scale or better benefits package, but it is important. Here, though, is an area in which one of the unique and troublesome aspects of a union of professional employees muddies the waters.

In many cases, the classic management-labor division doesn't exist; management and labor have gone to the same schools, hold the same degrees and share the same basic goals and concerns. Most architectural employees aspire to be principals; many feel that they are long before they get there. A recent study by P/A's research department shows that 83 percent of the architectural employees listed as draftsmen, for example, have at least three years of college education; more than half hold degrees, and three out of four degree-holders have degrees in architecture. They do more than simple drafting, according to the study. Less than half spend more than 70 percent of their time solely on drafting; one out of four spends half or more of his time on other duties—design, research, project management and coordination. One part of the study gives an idea of where draftsmen are headed: out of a group of employees who were once listed as draftsmen, but are no longer, 60 percent are now project architects, designers, planners, job captains and the like.

For this kind of employee, salary and benefits, while important, are not everything; traditionally the professional takes satisfaction from the job he does, and deserves recognition for it. Often the idea of professional recognition includes some participation in decisions that affect the firm as well as having one's name mentioned in the project credits.

#### **Faint, but growing hope**

Against that background—salaries that everybody agrees are low, benefits that either don't meet the needs of architectural employees or aren't there at all, and the strange situation of employers and employees being so much alike—it is



easy to understand the growing appeal of unionization. In a profession that has changed over the years from an elite of self-protecting, self-policing, self-employed professionals to a business in which large numbers of professionals are the employees of other professionals, the union offers the concern for the individual employee that a professional society, in its efforts on behalf of the profession as a whole, does not. To the employee, unionization looks more and more like his one real hope.

It's a faint hope, still, but it's growing. The first signs of employee militance surfaced in San Francisco in 1968, when five architectural employees, all associate AIA members, concluded that there had to be some way to bring about improvements in salaries, benefits and professional recognition. After five months of work they presented a study of salaries and benefits to the state and local AIA organizations, getting what they felt was a lukewarm reception. That prompted them to try a do-it-themselves approach and in February 1969 the Organization of Architectural Employees was officially organized, complete with constitution and by-laws. Since then OAE has published a salary guide and other documents and has petitioned for and held representation elections in several firms.

OAE now is legally recognized as a collective bargaining agent for employees in the offices of Hertzka & Knowles, Rex Whitaker Allen and Gwathmey, Sellier, Crosby. There have been more defeats than victories, and in the offices where OAE did win the elections, there have been no contracts negotiated.

In labor-oriented Detroit, Architectural and Engineering Employees, a local group, is working hard to expand to a national organization. "We're moving pretty fast," says AEE secretary Matthew Connor. "Membership has tripled since mid-December," he says; the union now has a membership "in excess of 500" well split between architects and engineers. A current membership drive is aimed at hitting the 1000 mark. AEE has not held elections at any firms, although they are on the verge of filing for them in a dozen offices. In another three offices, all with staffs of less than 20, the union has signed up all the eligible employees, eliminating the need for elections; contract negotiations are under way with those firms.

The move toward a national organization requires a revision of the AEE constitution to allow the chartering of chapters in other cities. Financing this national growth could be a problem, for AEE, like OAE, is not connected with any major labor organization. "We have no intention of connecting with them," Connor says, although in Detroit the group is affiliated with the local building trades council and subsequent chapters will affiliate with their local councils. For continued growth, however, AEE will depend on membership dues; when enough members are signed up in a city to support a chapter, one will be formed. A minimum of 25 members is needed; so far, Los Angeles has enough members for a chapter, and Pittsburgh is interested but not yet large enough. Once the constitutional changes are made, the group will get a new name: National Association of Architectural and Engineering Employees.

Right now, says Connor, wages are a more important con-

cern than benefits, but the list of what the union is seeking to achieve is long: substantial salary increases, guaranteed annual incomes, scheduled merit increases, cost of living increases; portable pension, medical-health, life insurance, vacation, sick pay and disability plans; grievance procedures, job security, apprentice programs and employee participation in all programs affecting them. Beyond that list, AEE has some other, broader goals. Before too long, Connor hopes, the union will be involved in area-wide, profession-wide bargaining, rather than one firm at a time, and eventually—within a year or so, he says—AEE hopes to be able to require a union label on drawings, blueprints and documents.

If AEE sounds more like the traditional idea of a union—they claim to be nothing else—the Architectural and Engineering Guild in New York City is a traditional union. The Guild is Local 66 of the American Federation of Technical Engineers, an AFL-CIO union that has been active for 30 years, according to business representative Ray Shannon. Only recently, however, has the Guild been trying to organize architectural firms, and it hasn't gone as far as the other two groups. Elections have been held in two New York architectural firms, and the union is batting .500. It won the election in Herman Jessor's office and tied, which is the same as losing, the one at Giorgio Cavaglieri's. At Jessor's office a contract has been negotiated, giving many in the bargaining unit salary boosts of \$25 a week and an average increase of \$18.75 a week.

#### From panic to reason

The initial reaction of other New Yorkers to the union effort was shock that a courtly gentleman like Giorgio Cavaglieri could find his firm faced by unionization. It wasn't long, however, before the New York Chapter AIA's office practice committee decided that looking for ways to put a crimp in the union effort was the wrong approach. Chapter membership includes employees and employers, split about half and half, ruling out a pro or con position. The committee, says chairman Peter Hopf, concluded that the only way they could deal with unionization was to provide information and advice when firms are faced with organizing campaigns.

The first order of business was a study of labor relations and unions. The committee "took testimony" from Cavaglieri and Herman Jessor, watched developments in San Francisco, talked to a labor relations attorney, studied material from the National Labor Relations Board decisions on OAE. They discovered, from talking to Herman Jessor, that the salary increase and benefits called for in the new union contract were nothing to fear; it wasn't the kind of contract that would put a firm out of business.

Another tack the committee took was an investigation of employment practices. Salaries, vacations and fringe benefits were surveyed in 1969, and another similar study is now being made. Hopf, checking into programs available through the national AIA headquarters, found the bulk of them geared to employers, not employees, and their portability "virtually zilch." "Maybe the union efforts represent a legitimate gripe," he says. "Maybe employment practices are out of date; if they were what they should be, there probably would be no need for unions."



Reactions in other cities pretty much parallel those in New York. Architects in Detroit are "scared green" according to one observer, though AEE's Matthew Connor says the union has met no real opposition to its salary benefit proposals. The fear, he says, is "that we might organize some small firm and put it out of business, but that's not our intent. We're being careful and realistic." In San Francisco, reactions have run the gamut from panic to reason.

In general, there is the admission—sometimes grudging, sometimes not—that the union efforts have brought to light some significant problems in the employment practices within the profession. "People have been leaving the profession," says Steve Rosenfeld, AIA's director of Professional Practice Programs, "because of inequitable salaries and benefits."

### AIA steps in

Although, as Arthur Kornblut, head of the department of professional services, admits, AIA is a Johnny-come-lately in personnel practices, the Institute has gotten a few things going during the past year. A standing committee of employees, employers and professional personnel managers has been set up to consider such matters as employment categories and titles, salaries and hours, fringe benefits, internal communications, continuing education, employee participation in decision making, employee pools in major chapters to keep architectural employees from having to find work out of town.

Another current AIA effort is a set of guidelines for writing personnel practices manuals. It will provide sample language and commentaries on statements of personnel policy, administrative practices, office procedures and advancement so that a firm can write its own employee handbook.

The drawback to any AIA effort, however, is that it can't force members to take advantage of them. This is particularly true of life and medical insurance programs; they have to be sold to membership, and if enough people join them voluntarily, they become, in effect, portable. The Institute is looking at ways to make its existing programs more attractive and to set up a pension plan. "It's something the profession needs," Kornblut says. "If it's good enough, even firms with in-house benefit programs might give them up for a broader one."

Because of AIA's part employee, part employer membership, Kornblut says the question isn't whether AIA is pro- or anti-union. "AIA leadership feels the need to set up some standards of employment practices in the face of the realities of today's world."

In spite of this enlightened neutral position, the unions insist on seeing AIA as an employers' group, a view which, while not factually correct, is certainly understandable. By and large, architects who have the time and the money to devote to AIA activities, particularly at any high level, are apt to be principals or at least management-level members of a firm. There is some hope of changing this appearance of employer orientation: employee members of the standing committee on office practices are having their expenses borne by their firms, and AIA is trying to attract more architects who are employees to its membership.

While the union gains have been relatively small so far, there is no reason to view the recent union activity as a pass-

ing fancy. Each of the unions has fairly ambitious future plans, and all show prospects of growth. The Architectural and Engineering Guild—the group in New York—has the experience and backing of a traditional labor organization; Architectural and Engineering Employees (Detroit) seems well organized, serious and sincere; Organization of Architectural Employees (San Francisco) is also well organized and dedicated, albeit a bit moralistic—its newsletter tends to run lengthy essays on professionalism.

### Growth slow, but likely

Growth will undoubtedly be slow for the unions; they must convince large numbers of professionals (who happen to be employed by other professionals) that there should be a union in their future. Professionals of any sort tend to be independent and self-sufficient, not wanting anyone to tell them what work they can do, or that for the next few weeks they shouldn't do it at all because they're going to be on strike. Or that finding a better job is not the only way of dealing with an unpleasant employment situation.

The unions will disrupt some management practices too, particularly if traditional union practices find their way into professional offices. Rigid job descriptions, for instance, could hobble the flexibility needed for an architectural firm. The traditional union tenet of last hired-first laid off could cost a firm its best employees, and requirements that laid-off employees be rehired might work against upgrading a firm's staff.

These aren't the problems they might seem, says Ray Shannon, business representative for the Architectural and Engineering Guild. "Vertical job descriptions may not apply in an architectural office. They would only work in some big office where there are a number of people doing the same job, or where a number of people do the same job in different areas." Rehiring laid off employees, he points out, really only requires that they be offered a chance to come back when work becomes available, if it's work they are capable of doing.

So far, architectural firms have had little to fear from the unions. The one contract negotiated didn't call for devastating salary or benefits hikes, and the situation will almost certainly never deteriorate into the sort of labor/management confrontations that can shut down the steel industry.

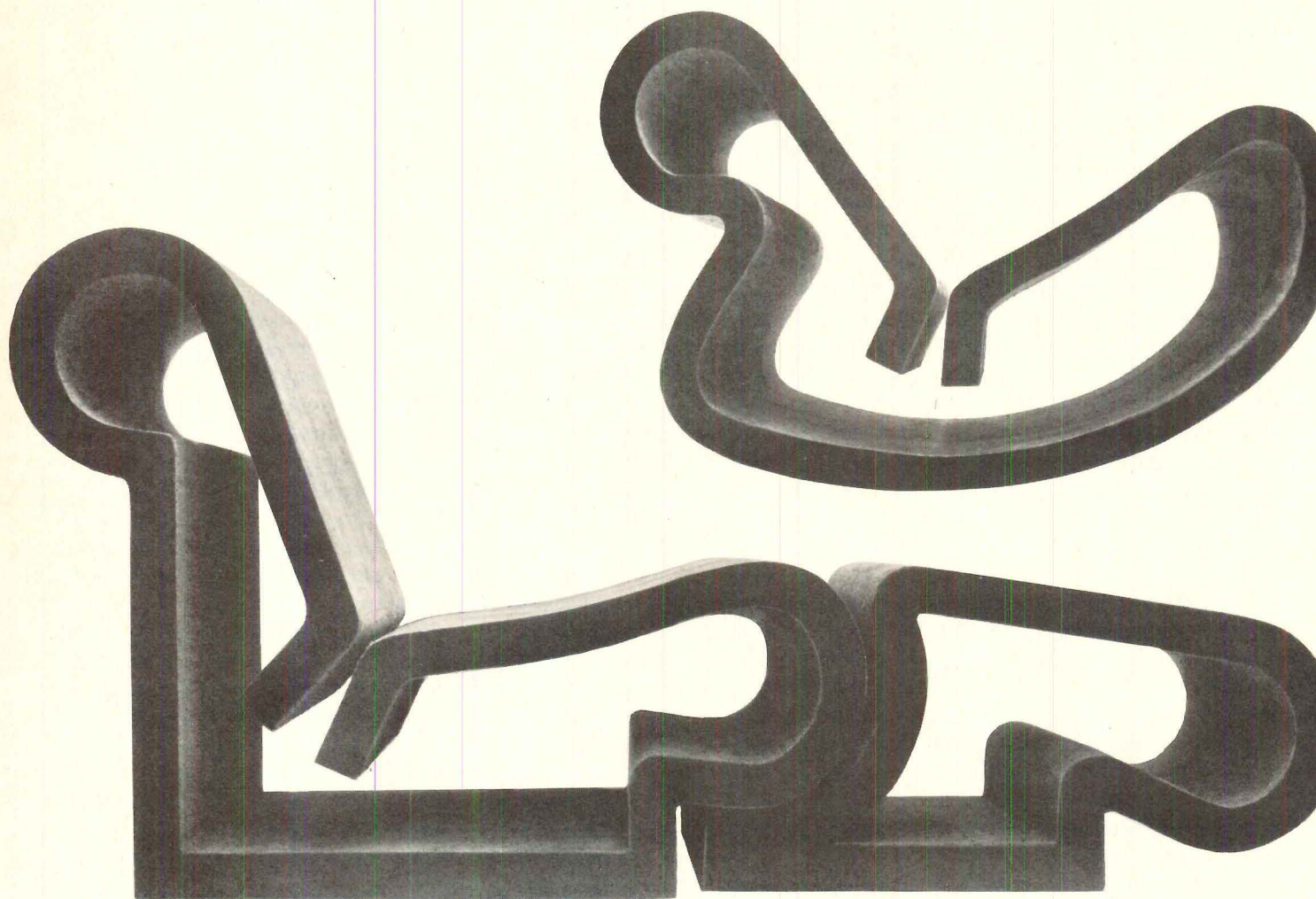
What architectural firms must look out for, however, is apathy. Within management, there has been a lack of realization that the problem is serious; sometimes it has been an unwillingness to take employment problems seriously, a hope that if ignored they will go away. They won't, however, and the firms that have already realized that and are trying to do something—anything—about them are ahead of the game.

Communications, overworked as it is, may be the key word. In fact, Arthur Kornblut at the AIA thinks he has spotted a pattern: in firms where the principals have made honest efforts to communicate with employees, union efforts haven't surfaced, or have been blunted; where the principals had lost contact with their staffs, the union found members. Whether indirectly, or directly through union activity, however, personnel practices in the profession are in for improvements; the problems that prompted the union activity are too real and too widespread to be ignored any longer. [CP]



# Etcetera

A collection of places, objects and art showing some of the diversity encompassed within the field of interior design



## Cardboard cut-ups

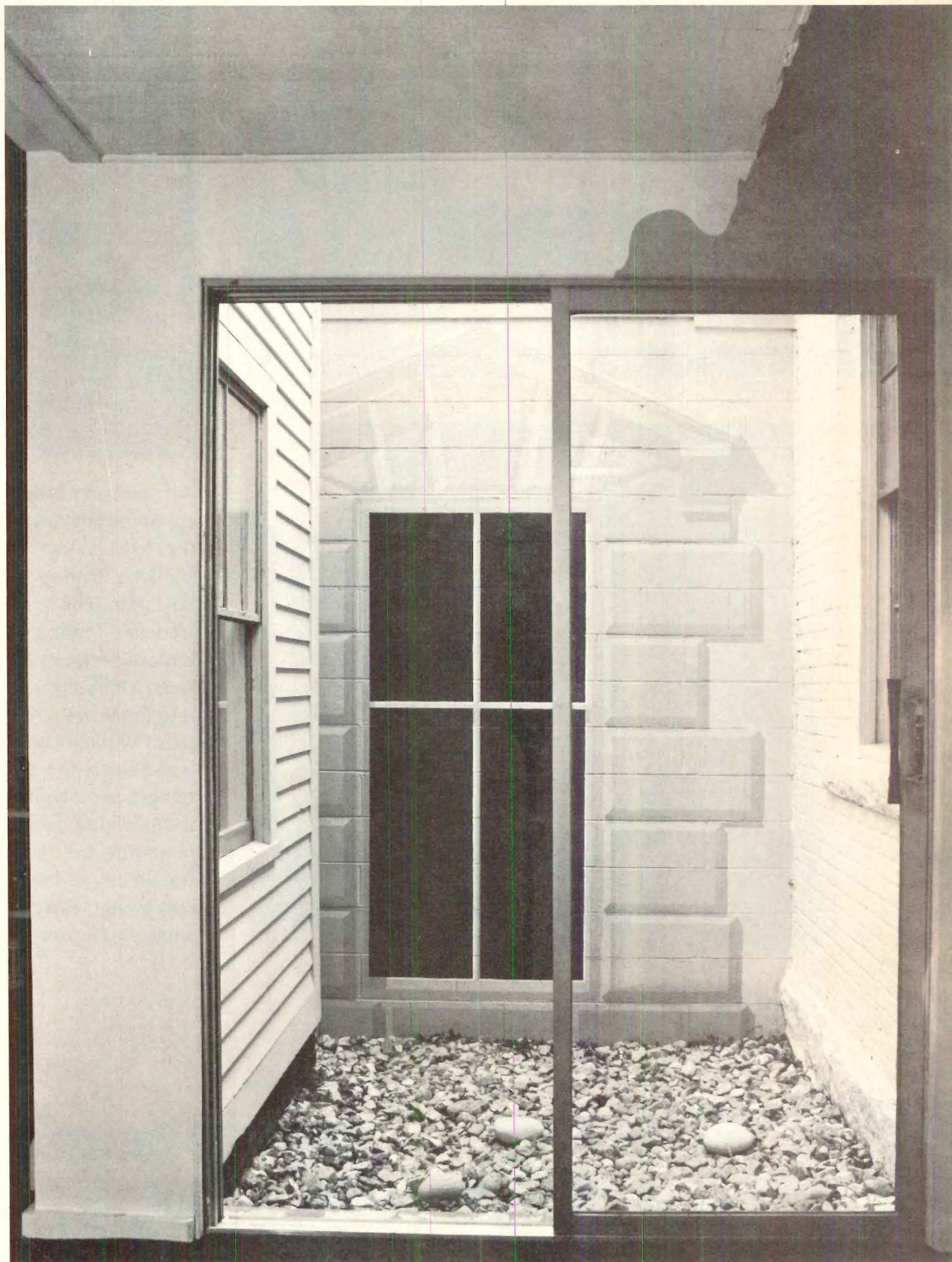
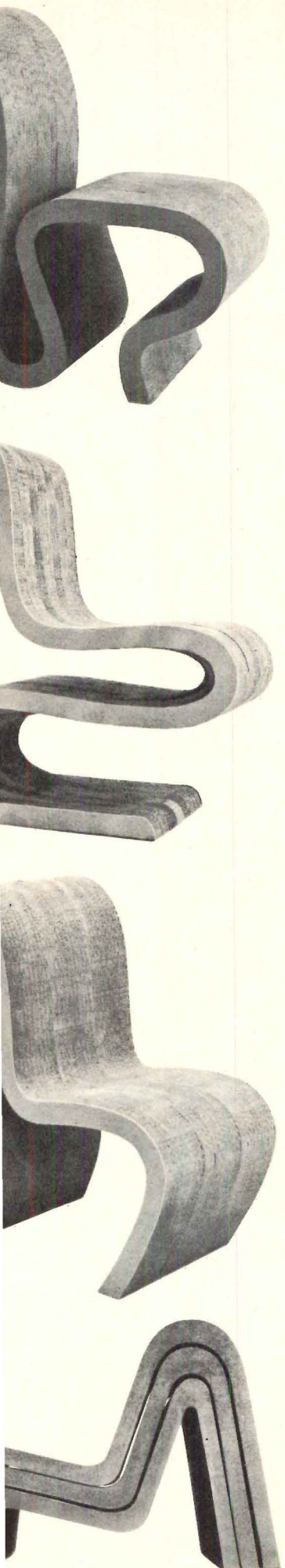
Designer Frank Gehry began using corrugated cardboard for architectural models and, intrigued by the texture and form possibilities of the material, decided to experiment with it for furniture. The results seen here come after four years of design and many attempts at finding the most efficient production methods for cutting costs. The pieces are now being mass produced.

Corrugated cardboard, a lightweight and inexpensive material, should provide a good alternative to the overstuffed, overpriced and often uncomfortable furniture now on the

market. While some of the pieces are rehashed versions of styles produced in other materials, there are many pieces which have no stylistic precedent, but which are responses to the possibilities of the material.

Besides being available to designers at the New York showroom at 162 East 62 St., the furniture will be marketed for the general public. Compared to other similar pieces, costs are low—\$36 for the lounge chair (wholesale). But Gehry hopes that, if the pieces are successful, the increase in production volume will allow the prices to be still lower.





### **Teehee palace**

In their forthcoming book on houses, authors Charles Moore, Gerald Allen and Donlyn Lyndon discuss the desirability of outlook—view or vista—in a room. Typically, the inclusion of things beyond is accomplished by means of a window. But if the window is not there or the view is not desirable, the authors feel there is no reason not to create one's own.

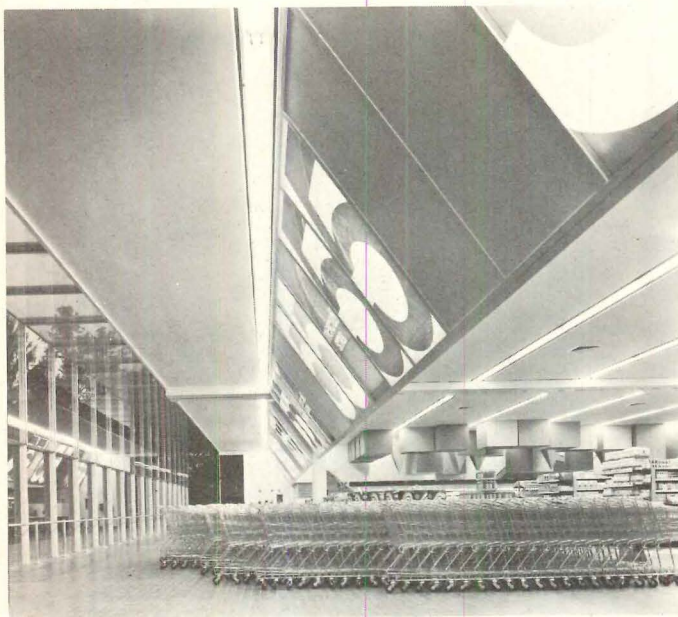
Following their own advice, they did precisely that on a concrete block wall across a small courtyard from the entry of Moore's house in Centerbrook, Conn. The impact of the window, according to Allen, lies in the nature of its improbability. Borrowed from the Palazzo del Té (1525–35) in Mantua by architect Giulio Romano, the window teases us in all its incongruities of time and place.

Photo: Wade Perry





Photo: Casali

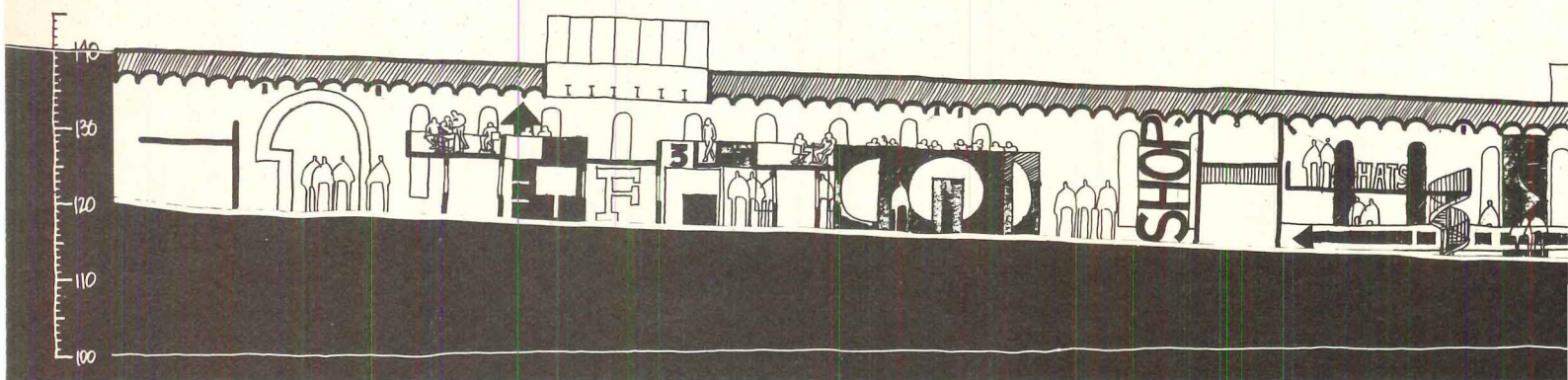


Etcetera



### All you can eat and more

La Rinascente, an Italian department store, has joined with Fiat to build two new prototypical supermarkets (SMA) for the outlying districts of Milan, with eight more now under construction. The first, shown here, was designed by Vittorio Gregotti and Franco Paulis and is constructed from one-meter-square prefabricated panels stacked two high to form the walls. SMA signs are kept simple and clean by inserting them into the prefab module. The second prototype by the same team with the addition of Valentino Parmiani is a very direct glass box with signage applied to the glass wall. The interiors of both prototypes are similar. Each has a series of geometric forms on the ceiling—cylinders, prisms and rectangles—used to identify the various sections of market. Although it might not be any easier to tell where something is than in an American supermarket, it is certainly a lot more pleasant to be there while you are searching.



### Underground diversion

During construction of the Boston City Hall, an abandoned subway tunnel was discovered near one of the load-bearing columns. What was then a great vexation to the structural engineers provided a stimulus to Stull Associates of Boston, who found plans for the tunnel and proceeded to make a proposal to the Boston Redevelopment Authority for turning the

space into something useful. The Government Center renewal managed to rid most of the area of its night life—undesirable as it was—and what was given back to the people was an immense brick-paved plaza with limited public use. The tunnel seemed a natural place to put shops and cafes which would provide some badly needed facilities for the area. Ac-

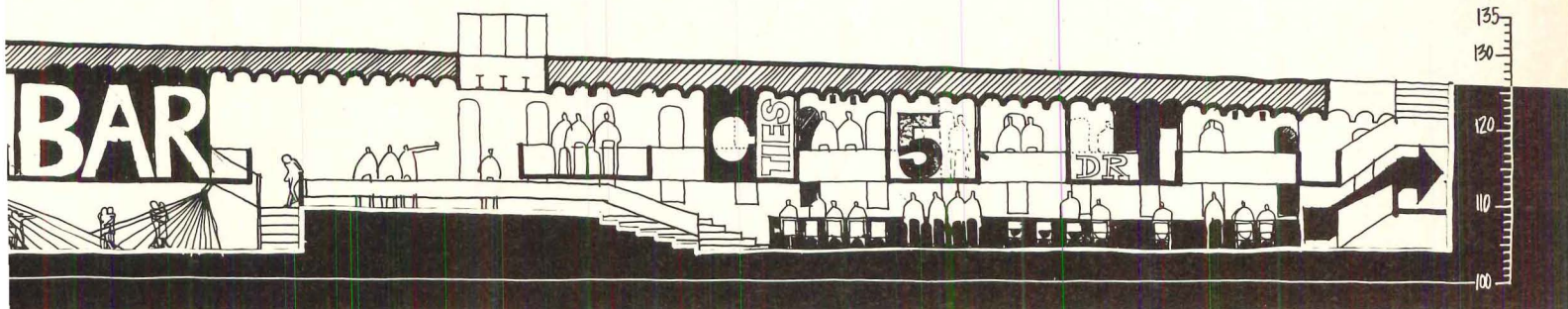
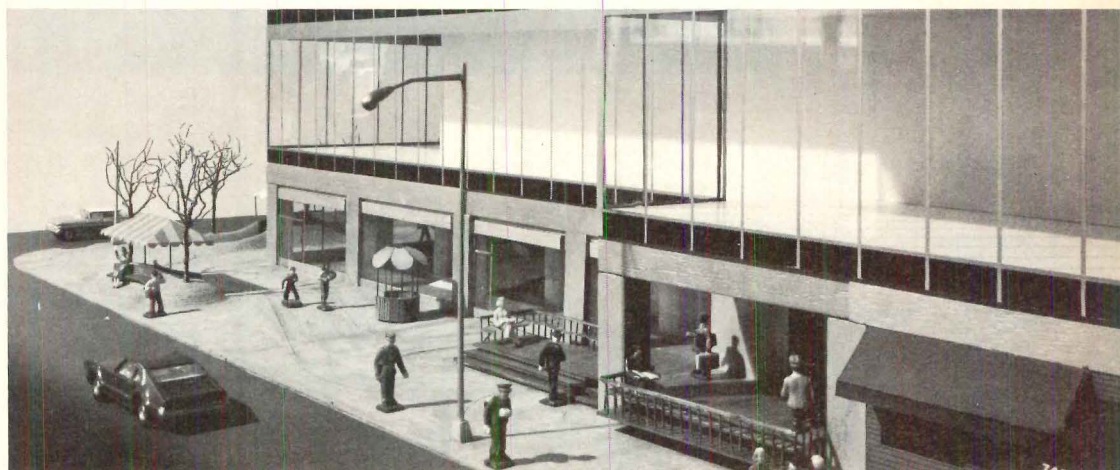


## Front porch on Third Avenue

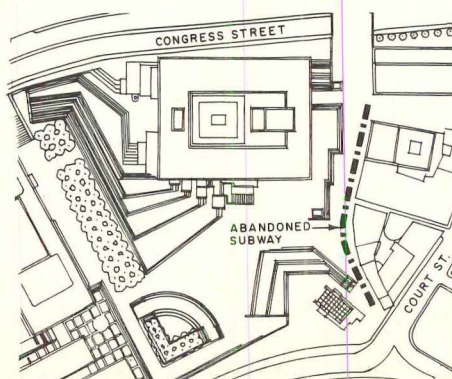
The newest of the William Kaufman office buildings in New York (P/A, Apr. 72, Mar. 71) is nearing completion. Located in an area of Manhattan that has seen a rapid growth in office buildings in the last five years, the plaza of the new building is not just a place to ignore like so many other sidewalks in the area. Designed by Pamela Waters, the paving is done in a series of different shapes, textures and colors. Major traffic routes around and into the building will be paved in an hexagonal red-dish-brown paver. Seating is sheltered by brick walls that grow out of the ground and is covered with colorful, translucent awnings. There was, at one point in the design, a fluffy white cloud over the wooden porch entry, and perhaps that will find its way back into the scheme. Not shown on the model are the Con Ed creatures—Con oedipus and Sootsucker—that will come crawling out of gratings in the pavement. The lobby, in contrast to the earthy colors and various textures of the plaza, will be entirely white with an exposed mechanical system, padded elevators, soft, rubberized flooring and neon signs.



Photos: Louis Checkman



Access to the tunnel occurs not only from the well-used Government Center transit station, but also from the shops and offices in the Sears Crescent directly adjoining it. The BRA was pleased with the idea, but gave the project back to Stull with the hope that if he didn't become a developer, he might be able to find one.

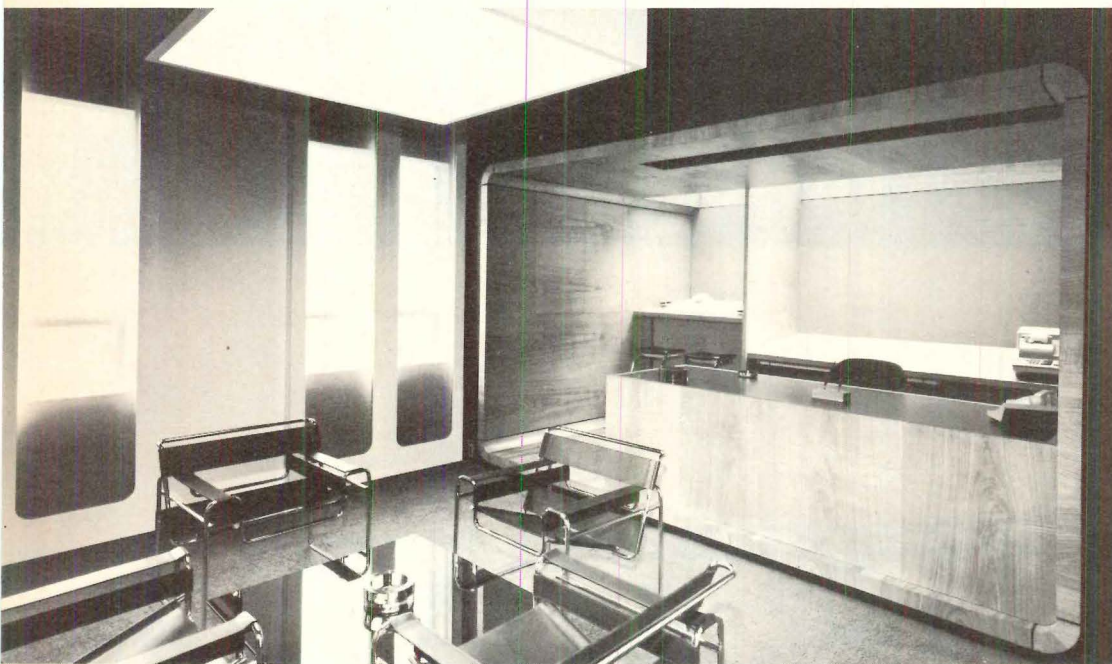






### Up against the wall

What was once a grand gesture to the quality of the New York City environment has now been turned into a commercial, moneymaking enterprise. Selected wall paintings by various artists which enlivened the city's streets have been reduced to less-than-room-size to provide the less-than-imaginative with instant graphics. Three Arts, manufacturer and distributor of these graphics even goes so far as to suggest that several different paintings might be hung together to form a continuous pattern of color. If that doesn't suit your taste, they suggest that the graphics be used as a room divider or three-panel screen. Art on a 40'x60' wall—exciting in its enormous size and bold color—is not necessarily art when reduced to 4'x6'.



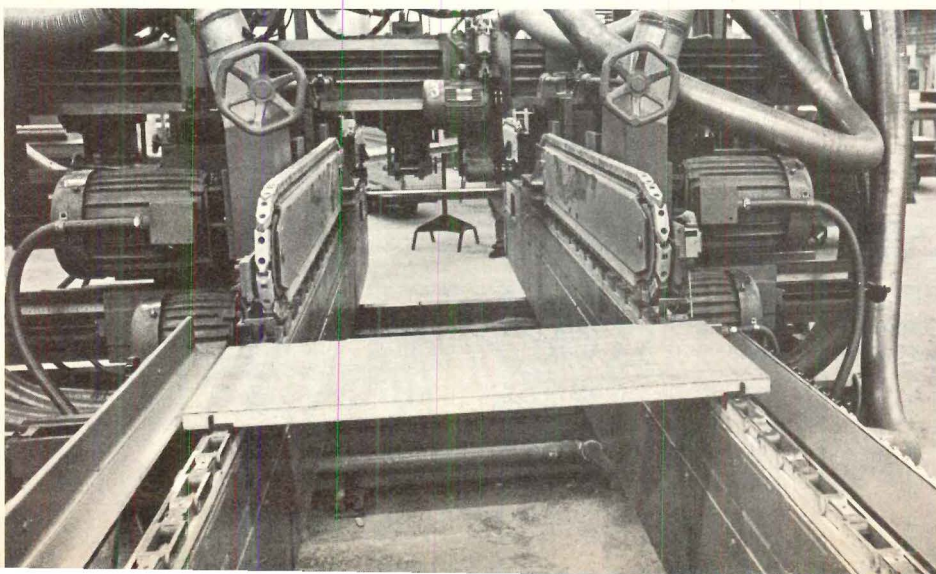
### Computerized carpentry

Pilot Woodworking is a computerized woodworking operation that bears little resemblance in its production methods to the oldtime hand craftsman who made cabinets. Among the automated machinery that does edge-banding, gluing and sanding, there is the double tenoner which is programmed to carry out 36 separate cutting operations simultaneously to a tolerance of  $\frac{1}{100}$  of an inch. This type of accuracy and mechanization allowed the company to turn out 30,000 sq ft of interiors a week—as they did for the John Hancock building in Chicago.

Pilot's services are more than just turning out desks and cabinets. The staff provides assistance to the designer in detailing and specifications produces working drawings, and coordinates delivery of furniture to the designer's installation schedule.

In the field of contract interiors, where large jobs often use a substantial number of the same piece of furniture, Pilot, because of its automation, can produce a custom designed piece—orders of 25 or more—at prices which are competitive with catalog merchandise.

Photos: Louis Reens





Etcetera



### A matter of taste

New York City is a place where standing elbow to elbow waiting for lunch is an everyday routine. Deli City on W. 47 St. is one place that through its design tries to eliminate the waiting-for-tables game. On one side is a long serving counter with clearly placed signs showing what can be had at each section. On the other side is a series of U-shaped counters for single seating, separated from the serving counter by a generous aisle to accommodate the crowds. In the rear is a small area of tables for those who come and want to make more of lunch than just having a hot dog. The whole is done in red, white and blue, mirrors and strips of fluorescent tubes hung under a black ceiling which seems to disappear altogether. It is a very simple, direct and functional solution for the lunchtime problem.

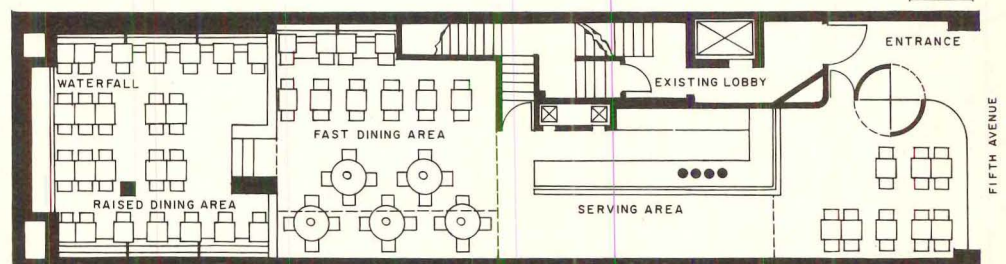
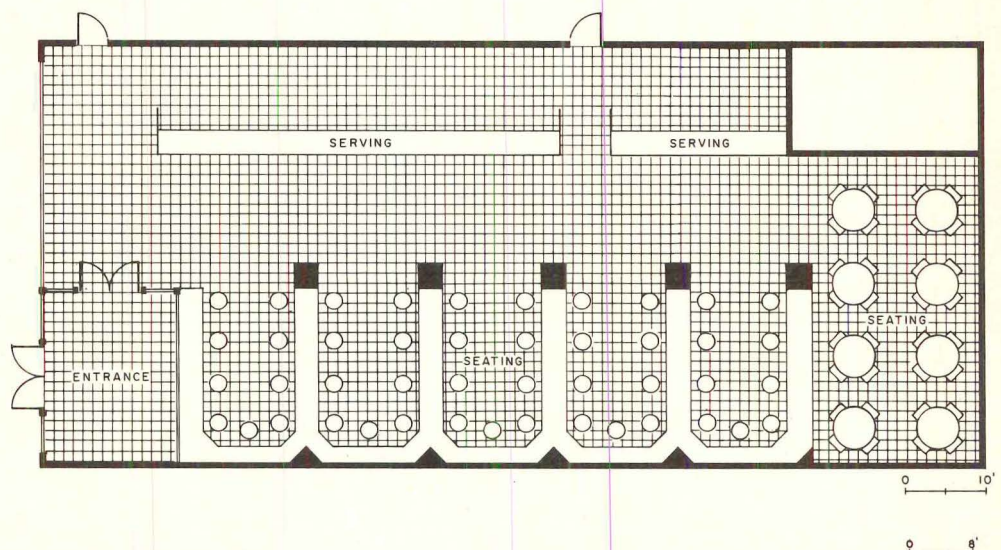
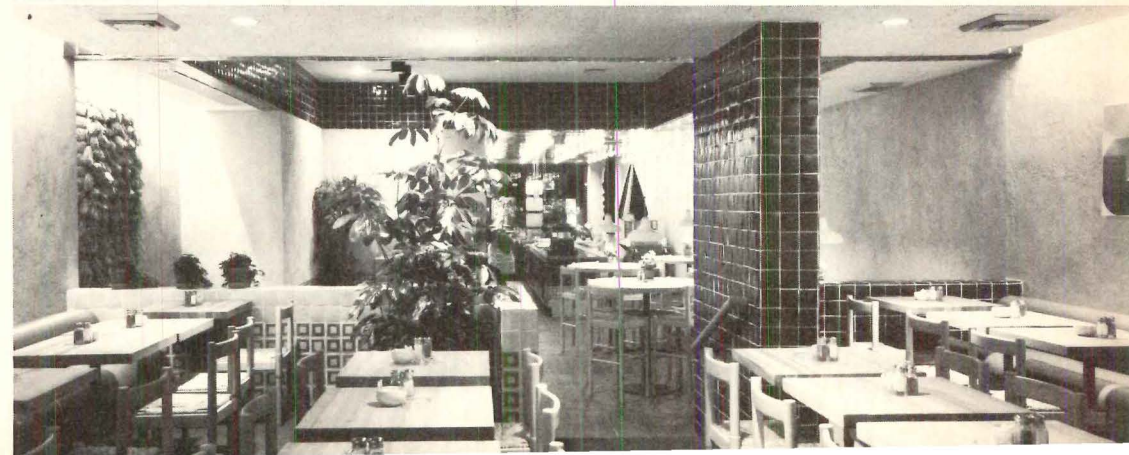


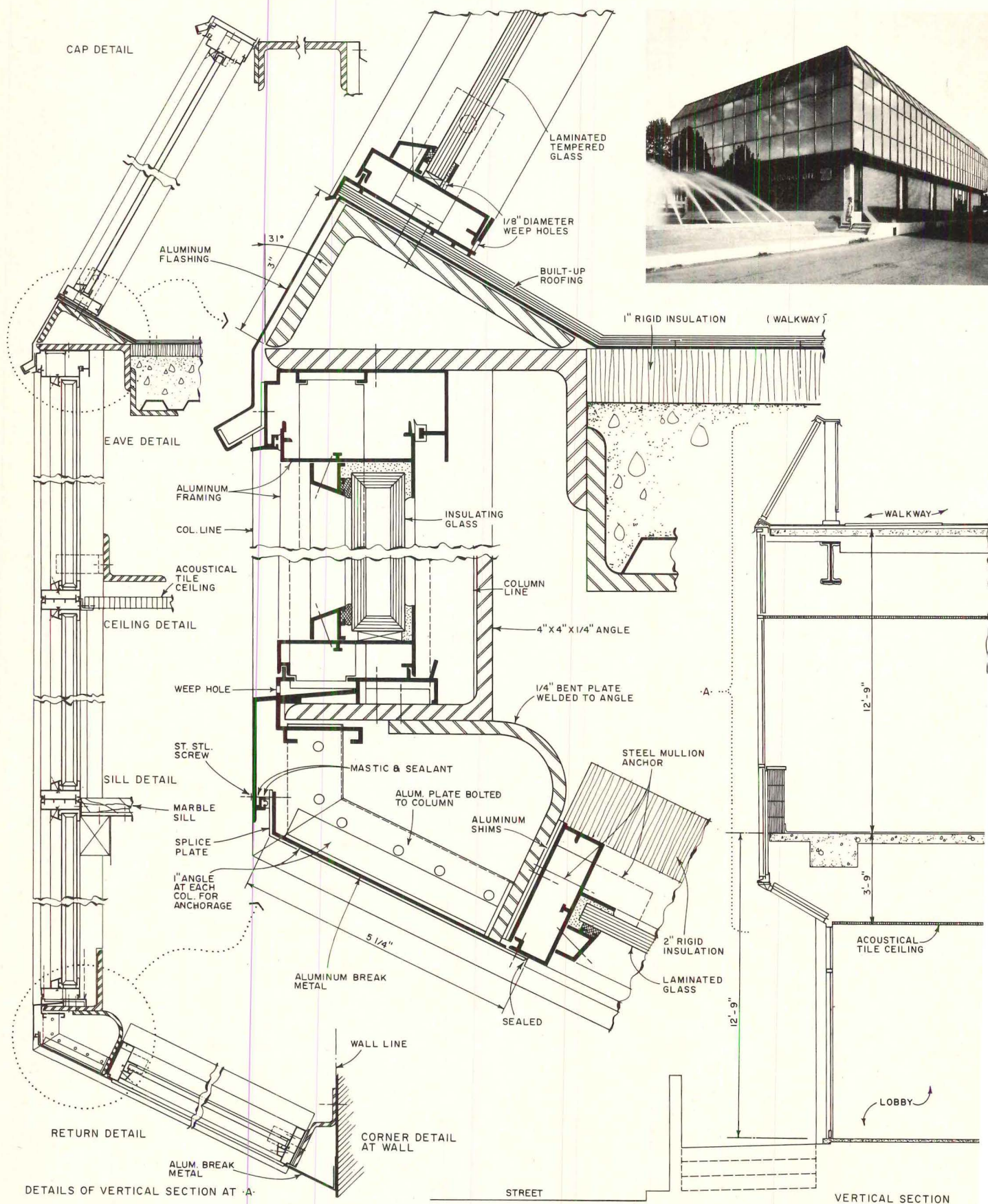
Photo: Norman McGrath



Around the corner on Fifth Ave. is La Potagerie designed by George Nelson & Company. It is similar in its function but very different in its intent and solution from Deli City. La Potagerie serves cafeteria style also, but the area allowed does not accommodate the line, and those who have finished eating must push out through crowds waiting to be served. There is no provision for single seating—only tables of two's and four's where persons sitting opposite assiduously avoid each other's gaze. Despite the functional obstacles, La Potagerie succeeds, judging from the crowds that continue to come. It succeeds because of the image it creates, appealing in its Provençal qualities to that snob in each of us that prefers soups to hot dogs. [LR]



# Cantilevered curtain wall



Dixie National Life Insurance Building, Jackson, Miss.  
Brumfield & Craig, Architects AIA



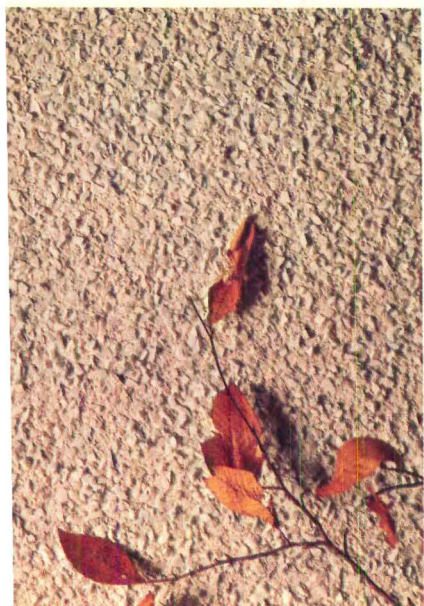
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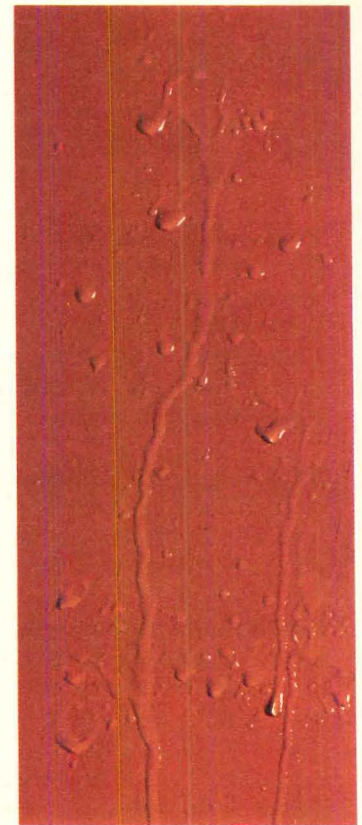
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## P/A annual design awards program for projects not yet built

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**Progressive Architecture** announces its twentieth annual Design Awards Program. Awards will be made to **U.S.** and **Canadian** architects, urban planners and their clients for projects now in the design stage to be built in 1973 in the United States and Canada. Any building, group of buildings or urban planning project illustrating definite building proposals will be eligible.

**Purpose** of the Design Awards Program is to give recognition to good design in the period of design development, rather than after completion, in order to encourage the designers and owners of the projects so honored.

**First design award, awards and citations** may be given by the jury listed below to the best projects chosen on the basis of site use and development, choice of structural system and materials and methods of construction, solution of the client's program, and overall design excellence. **Jury** will be composed of the following architects, planners and engineers: **Arthur C. Erickson**, Architect, Partner, Erickson/Massey, Vancouver, British Columbia; **Hugh Hardy**, Architect, Partner, Hardy Holzman Pfeiffer & Associates, New York; **John M. Johansen**, Architect, Principal, John M. Johansen, New York; **William J. LeMessurier**, Structural Engineer, President, LeMessurier Associates, Cambridge, Mass.; **Edward J. Logue**, President and Chief Executive Officer, New York State Urban Development Corp., New York, Visiting Lecturer, Yale Law School; **Rai Y. Okamoto**, Architect and Planner, The Okamoto Associates, San Francisco; **Archibald C. Rogers**, Architect and Planner, Founder and Chairman, RTKL, Inc., Baltimore; **Don Stull**, Architect, Principal, Stull Associates, Inc., Boston.

**Judgment** will take place in Stamford, Conn., during September 1972. Winners of Awards and Citations will be notified (confidentially) immediately after the judgment.

**Announcement** of the winning projects will be made at a presentation in a city to be selected. Winning projects will be featured in January 1973 P/A. As in the past, P/A will arrange coverage of winning projects in news media, particularly in those localities of the Award and Citation winners.

**Submissions** do not require filling an application blank. For each project submitted, simply send:

- 1 On a 5" x 8" card, type the client's name, location, and proper name of project; name and address of the architect; and identify all items included in the submission. As **anonymity is required**, mask architect's name on all other items submitted.
- 2 Brief explanation of the program and your solution.
- 3 Description of materials and construction methods used, and the reasons for their use.
- 4 Site plans; basic building plans; pertinent sections and details.
- 5 Perspective or model photographs.
- 6 A statement that: (a) the project is not yet completed and that construction will be under way before December 31, 1973; and (b) that submission of a project for judgment gives **Progressive Architecture** first rights in the architectural field to publish both the project and the finished building if it receives an Award or Citation.

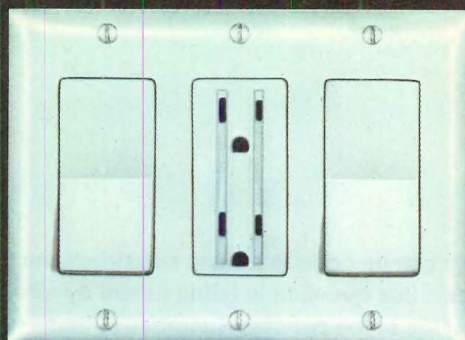
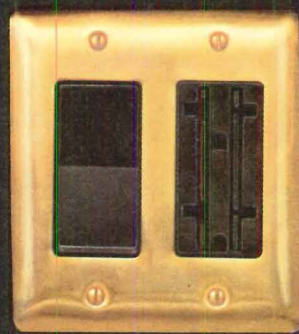
It is preferred that you submit 8" x 10" prints, photostats or photographs. All submissions must be firmly bound. Original drawings, actual models, or mounted exhibit panels will not be accepted and no material is to exceed 11" x 17" in size. Each project is to be submitted under separate cover.

**P/A will guard and return all submitted material.**

**Deadline for mailing** is August 31, 1972. Address entries to Awards Editor,

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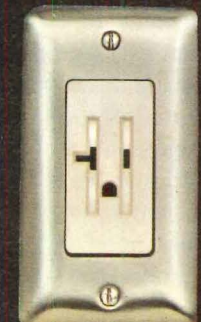
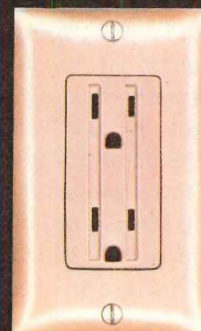
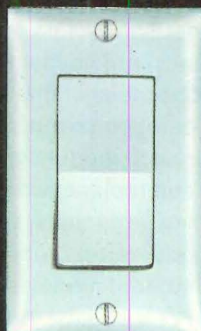
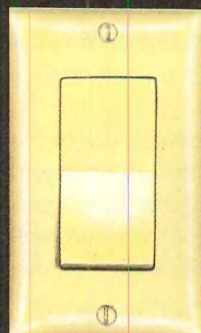
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# Reducing construction costs in the design stage

Sital Daryanani, PE

**What can be done to reduce construction costs?  
Today, this question is being posed by all owners  
because of the constant increase in these costs**

The owner's objectives regarding function, flexibility and operating cost will invariably affect the construction cost. However, with innovative engineering designs, the cost can be reduced with almost no effect on the owner's basic objectives. To make this discussion meaningful, the HVAC system of a typical high-rise office building will be used as an example, although similar thinking can be extended to other systems of buildings.

Recent studies have shown that with the improved air distribution devices now available, air change rates can be reduced by about 25 percent from the prevalent standard of six air changes per hour without any perceptible effect on room conditions. Since about 40 percent of the HVAC system cost is in the air supply systems, any reduction in the total air supply will show appreciable savings.

High-rise office buildings usually have an induction unit system for the exterior zone. The system cost depends upon the number of induction units, not because of the basic equipment cost but rather because of the installation labor.

Ideally, for fully flexible partition layout, one small induction unit should be installed for each module of, say 4 to 5 ft. However, since one large unit can replace two small units, savings can be achieved by installing large units. With one large induction unit for two 5-ft modules, no problem will arise if subdivisions have an even number of modules. When subdivisions have an odd number of modules, the number of units will not match the space requirement—the capacity will be either deficient or in excess by one module.

In actuality a problem will arise only in the case of deficiency and arriving at a solution is fairly easy. The extent of deficiency for a subdivision with seven or more modules is relatively small, and the deficiency in the case of subdivisions with three or five modules can be made up by adding one more isolated unit when required.

An induction unit system can be designed either for non-changeover or changeover operation. In a nonchangeover operation, the secondary coil of the induction unit is used for cooling throughout the year. Cold and dehumidified primary

air is supplied in summer and warm air in winter. In a changeover operation, the secondary coil of the induction unit is used for cooling in summer and for heating in winter. Generally, an induction unit system with nonchangeover design has a lower initial cost than a system with changeover design.

The following cost saving ideas can also be incorporated in the design: Each vertical riser can supply two to four units per floor. Round ductwork can be used wherever possible. Piping can be designed to work without reverse return loop. Two pumps, each with about 50 percent capacity, can be provided for instead of one full standby pump. A single secondary water zone can reduce the number of pumps.

Two systems are commonly considered for the interior zone: reheat and variable air volume. Cost comparisons usually favor the variable air volume system, and the owner receives operating cost benefits with this system.

The cost of the interior zone air conditioning system can be further reduced by the following ideas: A sufficient number of risers in the core to minimize the total sheetmetal cost; no insulation for the ductwork in the shafts and high velocity branches in the hung ceiling; use of the ceiling plenum space for return air with minimal sheetmetal connections to the return shaft; masonry shafts instead of sheetmetal for the return air; single duct layout with minimal transitions and without complex fittings; special areas located above or below the mechanical equipment rooms to minimize the ductwork.

The location of the chilled water and heating plants is important. The cost of the condenser water is lessened if the refrigeration plant is located as near the cooling tower as possible. The cost of the boiler stack is reduced if the boiler is located as near the roof as possible.

The greater the number of refrigeration and boiler units, the greater the flexibility and reliability of the cooling and heating system. However, the initial cost will increase as the number of units is increased. The cost of chilled water and condenser water piping should be minimized by designing for as low water flow rates as possible without increasing the cost of the refrigeration plant.

This discussion is by no means complete. Items having special applications or relatively small savings are not listed, and much will depend on the unique character of the project, such as the owner's objectives regarding function, flexibility, initial cost and operating cost. All these factors, together with local factors, will have to be thoroughly analyzed to achieve the maximum possible reduction in the construction cost.

**Author:** Sital Daryanani is Chief Mechanical Engineer for Syska & Hennessy, Inc., New York City.



# toppers

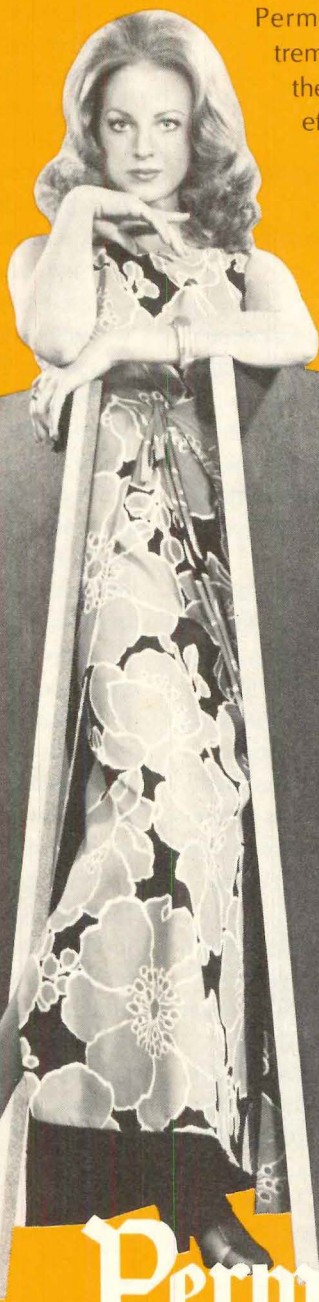
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# Building codes

Harold J. Rosen, PE, FCSI

## **A comparison of specification type and performance type building codes points out that the latter demand more and more knowledge on the part of the specifier**

For the specifier, the preparation of project specifications in varying localities that have different building codes requires an intimate understanding of these codes. In contrast to the designer who studies the codes to determine egress, fire ratings, structural adequacy and many other design requirements, the specifier must examine the codes to select materials for their noncombustibility, fire protection, fire stoppage and similar requirements.

The main purpose of codes is to provide standards for public safety, health and welfare. Thus, codes are written to establish criteria for fire protection, structural adequacy, sanitation, light and ventilation. Sound control to reduce noise pollution has recently been included for the first time in a major city in this country in the New York City building code. Since most municipalities do not have the expertise to prepare codes, a number of model codes, formulated by officials and professionals, are available for adoption by these governmental bodies. The building code selected becomes a law when enacted by the municipality.

The current model codes prepared by major organizations of building officials and widely adopted and used by municipalities are the Basic Building Code, National Building Code, Southern Building Code and the Uniform Building Code.

The Basic Building Code is sponsored by the Building Officials Conference of America. First developed in 1950, it has been updated frequently since then and is widely used in the East and Midwest. The National Building Code, issued in 1905 by the National Board of Fire Underwriters now is known as the American Insurance Association. The Southern Building Code is the product of the Southern Building Code Congress and was first introduced in 1945. It is used primarily in the south. The Uniform Building Code is published by the International Conference of Building Officials. First published in 1927, it is used extensively in the western states.

In addition to the model building codes, several states have developed codes for adoption by their communities. Apart from the codes governing building construction, there are model codes concerned with plumbing, electrical work and

mechanical work. The National Plumbing Code has been developed as an ANSI Standard A40.8. The Western Plumbing Officials Association has a code governing standards for plumbing, heating and air conditioning. The National Electric Code produced by NFPA has been adopted as an ANSI Standard C1.

Building codes are written on the basis of "specification type" and "performance type" codes. The "specification type" predates the "performance type" and specifies materials and methods permitted under the code in the design and construction of a building or structure. Under the "performance type," materials, methods and systems used are left to the architect's and engineer's discretion provided that the performance criteria for health, safety and welfare are met.

The older "specification type" codes are restrictive in that they retard the acceptance of new and improved uses of materials, methods and systems. They also stifle and inhibit innovative design, and prevent cost reduction because of built-in restrictive "specification type" requirements. Since the "performance type" code does not limit the choice of materials and systems, the architect, engineer and specifier are free to pursue new directions provided the design and engineering criteria of the "performance type" code are met.

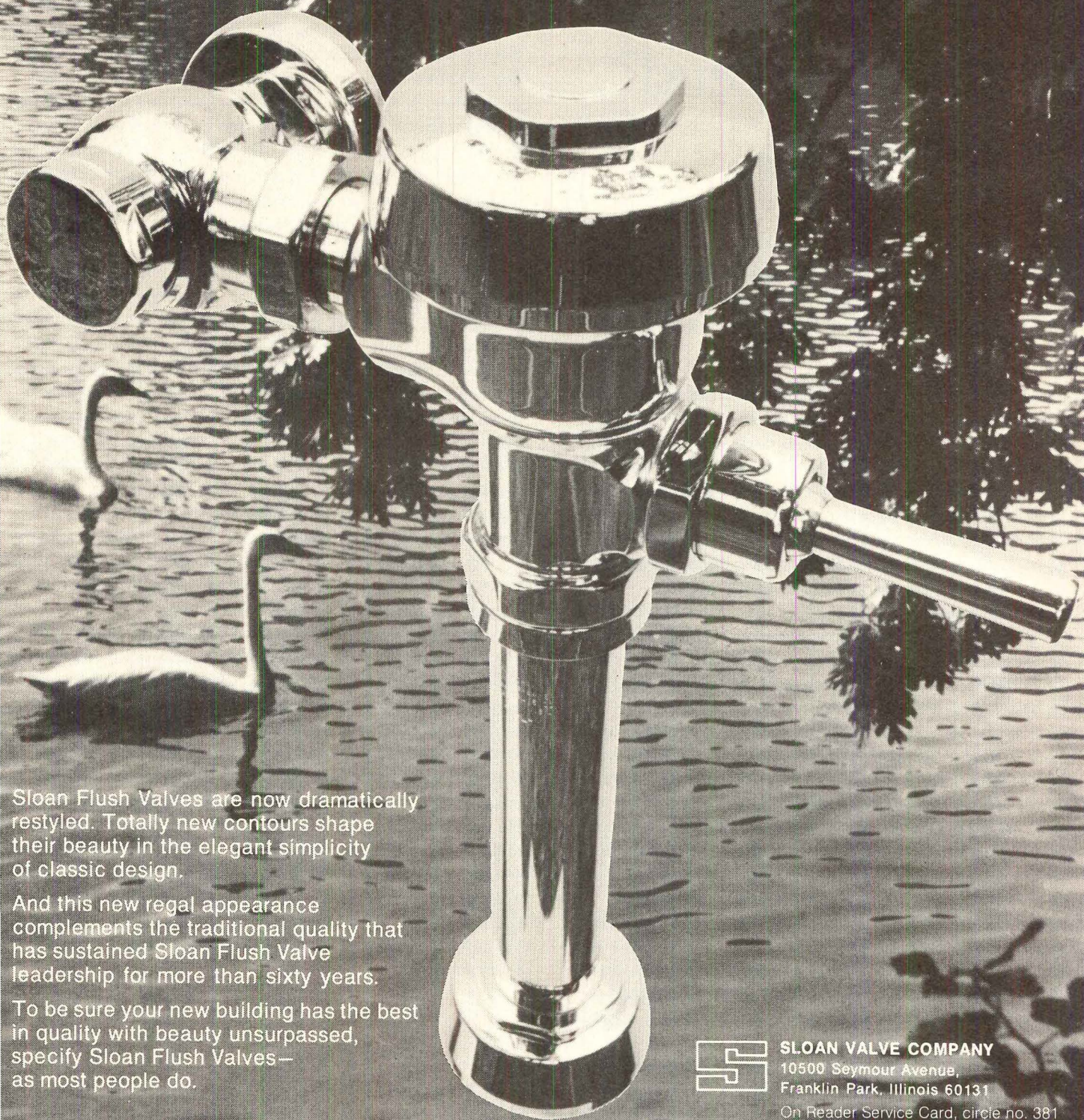
The increasing acceptance of "performance type" codes will ultimately be more demanding of the specifier. He will be obliged to study and evaluate the code and search out the combination of materials, methods and systems that will meet performance criteria. For example, the New York City building code for certain applications permits an exterior wall to have a fire resistive rating of zero except that the materials used in its assembly must be "noncombustible." However, this code's definition of "noncombustible" is perhaps the most stringent of all codes. Insulating materials and fire-stopping materials used in conjunction with this exterior wall must be noncombustible and meet the requirements of ASTM E136. Very few insulating and firestopping materials currently meet this requirement. Another example in this code is the requirement for sound transmission levels in dwelling units. Floor, wall, ceiling and door systems must be studied and analyzed to achieve the minimum sound transmission performance requirements established in the code.

The "specification type" codes have been criticized for their failure to provide for the acceptance and use of new materials. However, the slowly emerging new "performance type" codes providing for the selection of materials and methods on the basis of performance criteria will demand of the specifier in the future a more highly qualified and technically oriented individual who is thoroughly trained in the science of building materials and systems.

**Author:** Harold J. Rosen is Chief Specifications Writer of Skidmore, Owings & Merrill, New York City.



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# Design professionals: Where does responsibility end?

Bernard Tomson and Norman Coplan

**The area of an architect's or engineer's liability is often far wider in scope than just providing adequate plans and specifications, as the authors cite in the case below**

The architect or engineer is charged with the duty of exercising reasonable care and diligence in performing his duties and functions. Plans and specifications may be adequate and appropriate for the construction of a particular project, but the architect or engineer may, nevertheless, be held responsible for failing to take precaution to avoid the creation of a hazard which results from the nature of the project. The potential area of liability of a design professional is thus broader than that which may be commonly contemplated.

Illustrative of this broad concept of responsibility is a recent case involving the professional services of a civil engineer retained to provide plans and specifications for the connection of a hospital's sewage disposal facilities (a septic tank system) to the town's trunk sewer (*St. Rita's Home, Inc. v. Town of Amherst*, 38 A.D. 2d 109). The defendant engineer undertook to render his professional services so that there would be compliance with the requirements of the ordinances of the town. The sewer ordinance provided, among other things, that "all plumbing fixtures installed in cellars and basements shall be on a branch line from the main sanitary drain and shall have a gate valve in the branch line to prevent flooding in the event the street sanitary sewer becomes clogged." The sewer ordinance, however, applied only to a sanitary sewer system and not to a septic tank system, which, as contrasted to a sewer system, is not subject to the danger of backflow. The hospital, therefore, did not have and had not been required to have, any gate valves to prevent possible backflow in its existing sewage facilities.

The defendant engineer, when preparing his plans and specifications to connect the existing sewage system of the hospital to the trunk sanitary sewer in the highway, did not examine the building to determine whether it had any gate valve and no provision was made in the plans for the installation of a gate valve. After construction was completed and the hospital's septic tank system was connected to the town's trunk sewer line, the main sewer trunk backed up causing sewage to flow into the basement of the plaintiff's building, thereby causing substantial damage. Suit was instituted by the plain-

tiff against the engineer contending that he had been negligent in designing the connection of the hospital sewage facilities to the trunk line sewer by failing to provide for the installation of a backflow gate valve. The trial court found no evidence to show that the engineer failed to devote a reasonable degree of skill and fidelity to his work and dismissed the complaint. Upon appeal, the trial court's decision was reversed and the engineer was held liable for the damages.

The defendant engineer had contended that his only duty had been to provide an "out-fall" from the existing facilities to the main trunk in the highway and that the ordinance in question did not require a gate valve at the site for which he had drawn the plans. However, the Appellate Court ruled that the engineer should have perceived that there was a risk of backflow as a consequence of the connecting of the plaintiff's system to the trunk sewer. Therefore, he should have investigated to determine whether the septic tank had a gate valve and if it did not, provide for the installation of the same in his plans. The court said:

*" 'The risk reasonably to be perceived defines the duty to be obeyed.' In this case, defendant was aware that plaintiff relied on it to provide a proper system when a connection to the trunk sewer was to be made. The testimony of the expert produced by plaintiff amply established the need for a gate valve if plaintiff was to be protected from the backflow reasonably to be anticipated and which in fact occurred. The need for the valve was further demonstrated by the requirement in the town ordinance 'to prevent flooding in the event the street sanitary sewer becomes clogged.' This requirement, coupled with the physical facts of high sewers and a minimum line of flow, leads to the inevitable conclusion that a gate valve in the system was a necessity if the danger of backflow—which was a danger created only by the connection of plaintiff's premises to the municipal line—was to be avoided."*

In rejecting the contention of the defendant that the necessity of a gate valve was not within the scope of the services for which he was retained and was a function of a mechanical engineer rather than a duty of a civil engineer, the court referred to an 1889 decision (*Hubert v. Aitken*). In discussing this very case several years ago in one of our "It's the law" columns, we pointed out that the principles stated by this case in 1889 were an excellent guide for understanding how the law had evolved and would continue to evolve in respect to the responsibilities of architects. The precise question involved in the 1889 case was the responsibility of the architect arising from his reliance on incorrect specifications supplied by a contractor. A comparison of the judicial determinations indicates a continuing trend extending the liability of design professionals.

**Authors:** Bernard Tomson is a County Court Judge, Nassau County, N.Y. AIA. Norman Coplan, Attorney, is Counsel to the New York State Chapter of the AIA.





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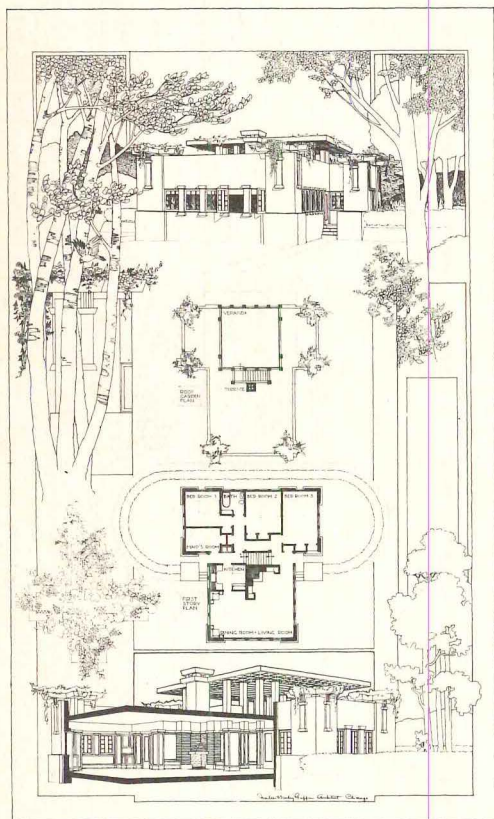
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# Frank Lloyd Wright and friends



**The Prairie School: Frank Lloyd Wright and his Midwest Contemporaries** by H. Allen Brooks. Toronto: University of Toronto Press, 1972. 373 pp., 247 photographs and drawings. \$25.

*Reviewed by Leonard K. Eaton, Professor of Architecture at the University of Michigan.*

For more than two decades, there has been an increasing interest in the profession and among historians in the work of the Prairie School, that gifted group of designers who flourished in the American Midwest prior to World War I. Among historians none has been more assiduous than Professor H. Allen Brooks of the University of Toronto, and now he has presented us with the fruits of his labors in the shape of a large and handsome book, evocative of the school itself in its design (it is square in form, and the lettering on the dust jacket and chapter headings is vaguely Wrightian in feeling). At once it may be said that the work will take its place alongside the earlier volumes of Morrison, Hitchcock and Manson as a fundamental contribution to our knowledge of the period.

Taking as his point of departure the Chicago architectural milieu of 1900, Brooks devotes his first two chapters to "The Taste Makers and the Times" and "The Architects and Their Activities." Here he concentrates on the periodical literature of the age, the social activities of the occupants of Steinway Hall, the city as a center of the Arts and Crafts Movement and similar related themes. After thus setting the scene, he proceeds to a discussion of the men themselves, beginning with the problematical figure of George Maher, and ending with the late work of William Drummond.

Tied closely into the sections on the buildings of individual architects is a pro-

posed chronology for the Prairie School. Essentially, Brooks distinguishes three stages in its development. From the late nineties until 1902-03 it was dominated by no single personality, but the general ideas of ideas with which the architects were working emerged. From 1903 until slightly before his flight to Europe in 1910, the center of action was unquestionably the studio of Wright in Oak Park and most of the men who were later to do important work on their own were busy there. Brooks believes that the heyday of the school was from 1909 until about 1916, at which time it offered the same enormous cultural shock which hit most of the other progressive movements in architecture in the West world (such as the Secession in Vienna) and virtually disappeared from view. As well known, the late work of men like Drummond is not Prairie School at all, the late buildings of Barry Byrne, mostly ecclesiastical, likewise differ from the earlier, though in an entirely different way.

From this interesting analysis two important conclusions may be drawn. The first is that several of these men were unquestionably important figures in their own right. To label the buildings of Byrne, Griffin or Purcell and Elmslie as "Wrightian" is a gross oversimplification, and there is no logical justification for doing so. Griffin's buildings, for example, bear about the same relationship to Wright as do those of Olbrich to Otto Wagner; they are inspired by the Master but independent of him. Perhaps the major achievement of Brooks in this book lies in his differentiation of the essential styles of the Prairie School architects. Thus the buildings of Purcell and Elmslie were usually lighter in feeling than those of Wright and generally closer to [continued on page 128]



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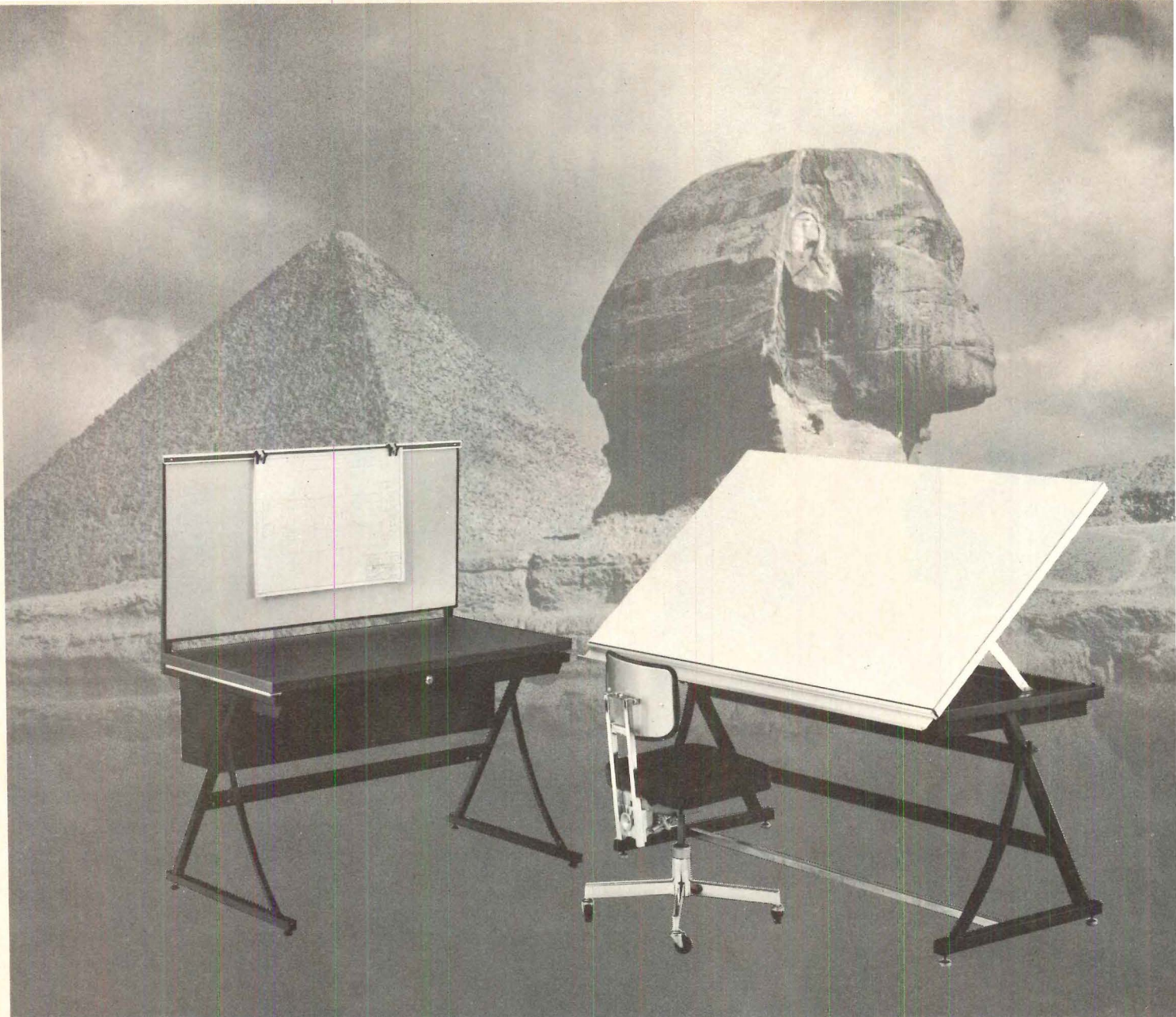
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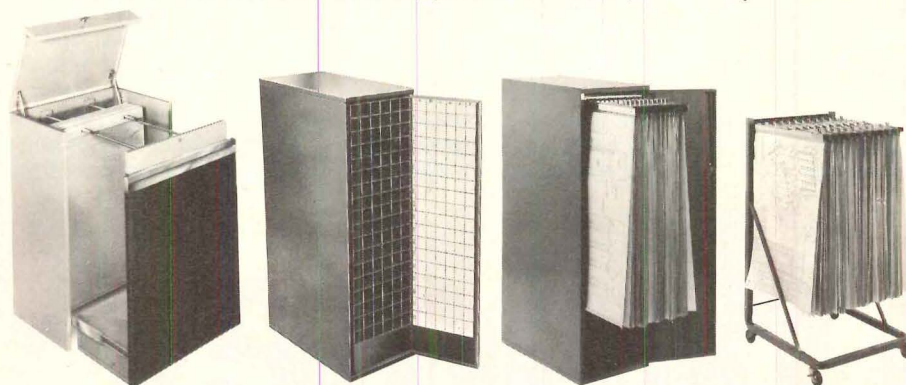
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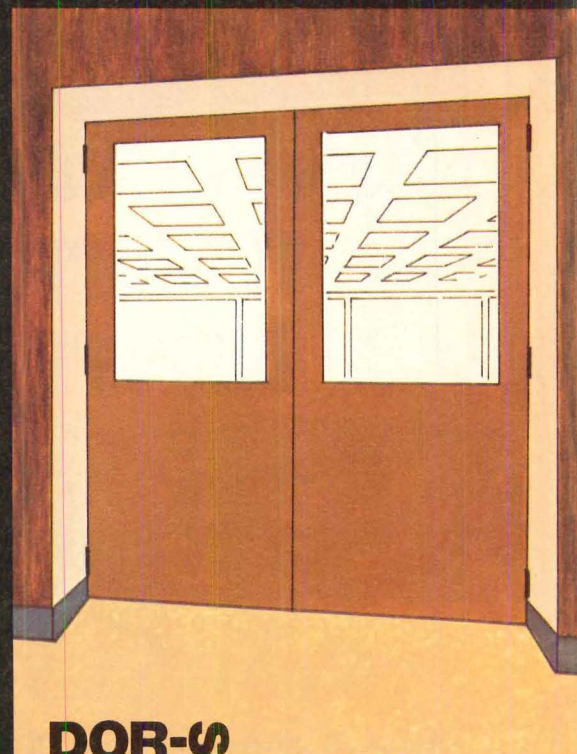
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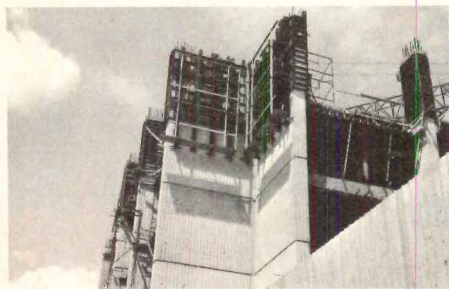
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**Books** continued from page 120

those of the International Style of Europe after World War I. Here Brooks owes a great deal to the previously published work of David Gebhard, which he generously acknowledges. Second, although the book is magistral in form and tone, it is clear that the surface of the subject has barely been scratched. Brooks has performed an important service in uncovering the work of such men as Percy Dwight Bentley in La Crosse, Wisconsin and the Canadian Francis C. Sullivan, but a number of fascinating questions are left dangling. Thus Brooks is probably correct in attributing the Seattle houses built during the brief partnership of Byrne and Willatsen mostly to the former, but a more complete investigation is obviously needed. On the other hand, at this stage of the game the book could not be absolutely comprehensive. The fact of the matter is that the Prairie School was the one American development in the visual arts prior to World War I comparable in its international importance to French Impressionism or German Expressionism. There is enough material here to keep a battalion of architectural historians busy for a generation. Brooks has staked out what will probably be a generally accepted chronology and indicated the lines which research should follow. This is no small accomplishment.

The chief criticism of this important work must lie in the author's general neglect of the environmental considerations, which were generally so important for the Prairie School. To take the simplest possible example, James Fitch long ago pointed out that the roof overhangs which were so prominent a feature of Wright's work not only made sense as design elements but also as sun shades for glass areas in a brutal summer climate. More recently, Reyner Banham has treated the remarkable array of heating, ventilating and lighting systems which Wright built into the Roie house. Brooks, altogether a more conventional historian, does not take these matters into account, although they were clearly of major concern to the architects he is discussing. In an age when we are becoming increasingly skeptical of elaborate technologies, the Prairie School houses are full of useful clues and simple solutions which will well repay close study.

It is a pleasure to report that the book is beautifully made. The photographs are of excellent quality and magnificently reproduced. Plans and drawings are easy to

read. In a close scrutiny of the text I found only a few minor errors. The name of William Gray Purcell's Portland disciple was Van Evera Bailey, *not* Evera Van Bailey. Purcell was, moreover, not a bachelor but a happily married man, at least when I visited him in 1954. Also the name of the Olmsted firm is misspelled. These, however, are minor points. While the price of the book will unhappily discourage many prospective purchasers, it can be recommended with very few reservations to anyone interested in perhaps a vital phase of the American architectural inheritance.

**Pedestrian Planning and Design** by J. J. Fruin. Massapequa, N.Y.: Maudep Press, 1971. 206 pp. \$5.95 (prepaid, paperback).

The planning and design of building street spaces for "comfortable and convenient human use" is the focus of this book. The author has been engaged in various phases of the planning, development and operation of transportation facilities for The Port of New York Authority over 17 years and has done considerable research in designing for pedestrians.

Beginning with a brief historical view of the pedestrian man, the book approaches varied human characteristics related to pedestrian design, considers the pedestrian in today's city and his safety there, and defines fundamentals of traffic design in relation to people who walk. The handicapped pedestrian, queuing, stairs, elevators, escalators are all considered and new developments in "planned pedestrian environments" are offered. Illustrated with graphs, charts and photographs, this book is a useful study for city planners and offers material that should be of interest.

**Housing Crisis U.S.A.** by Joseph P. F. New York: Praeger Publishers, 1971. 200 pp., plus detailed reference notes and bibliography. \$7.95.

Books that purport to analyze the nation's housing problem tend to be collections of dry, dull papers originally given by self-appointed experts who gather at seminars and conferences to tell other experts just how bad life really is below the surface of middle class, prosperous America. *Housing Crisis U.S.A.*, on the other hand, is a rarity in the field—a comprehensive analysis that is also eminently readable.

The author earned his "expert" background while covering real estate and housing news for The New York Times but, despite a foreword by Mayor John V. Lindsay, is not a New York City book. It deals with  
[continued on page 134]



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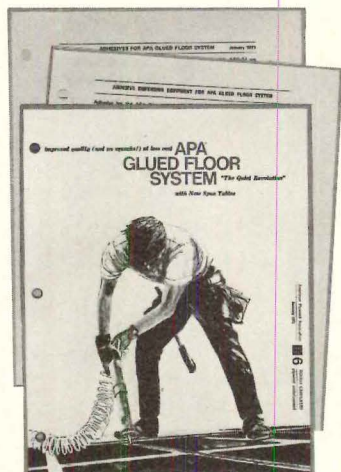




# New information on plywood building systems and design.

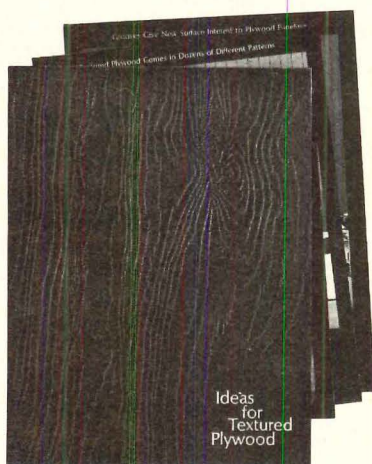
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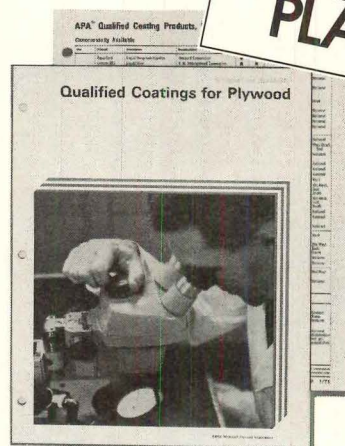
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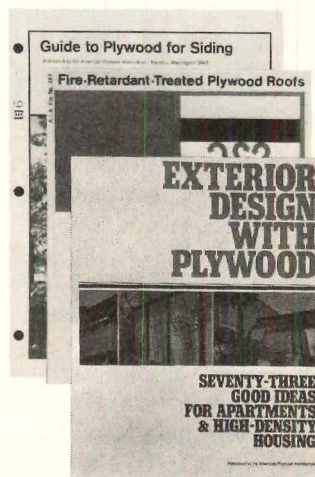
**Textured Plywood Portfolio.** We've added to the APA textured plywood idea collection. Full-color photos show varieties, patterns, species. Paneling and siding suggestions for office buildings, apartments and restaurants. Application and finishing suggestions, brand names, list of manufacturers.

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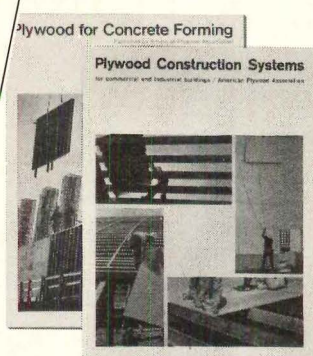
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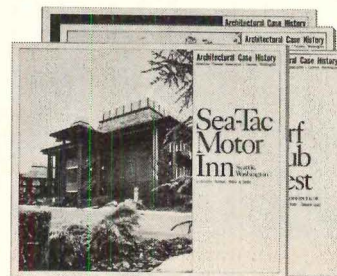
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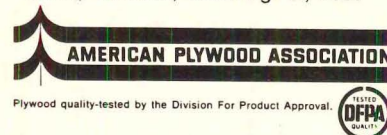
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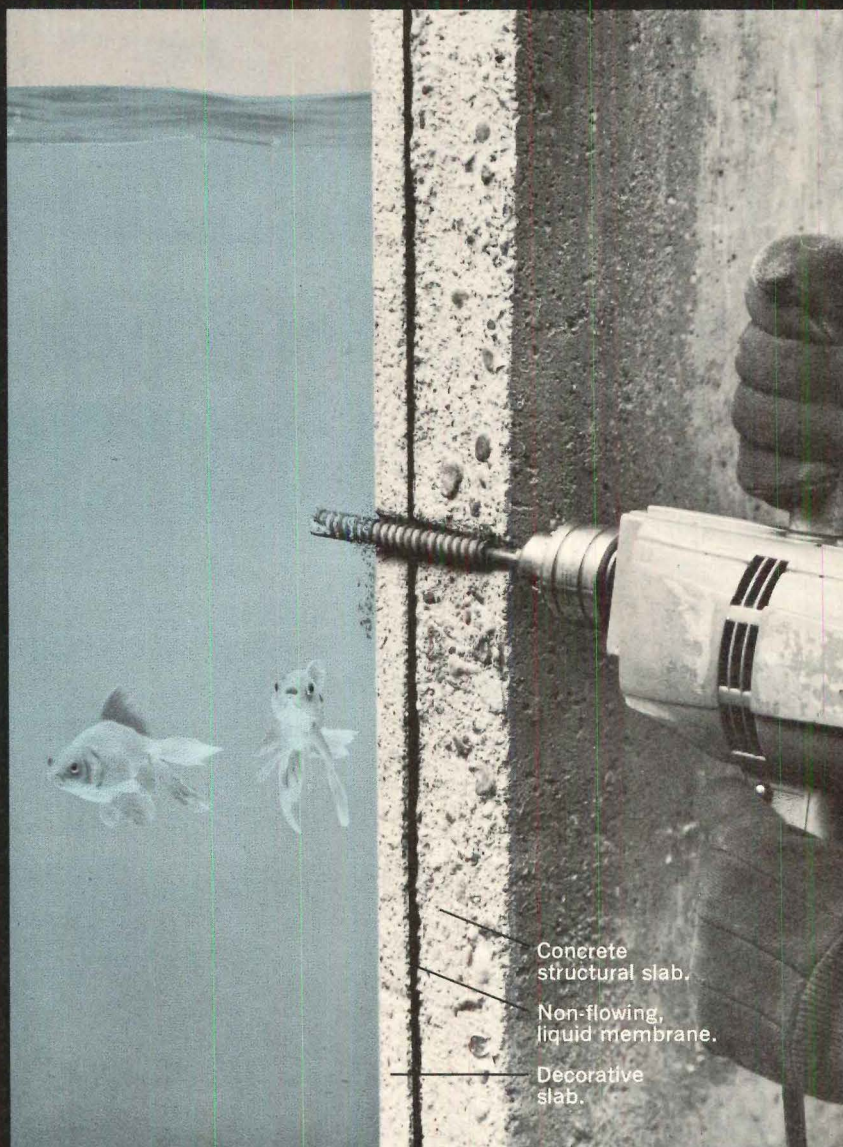
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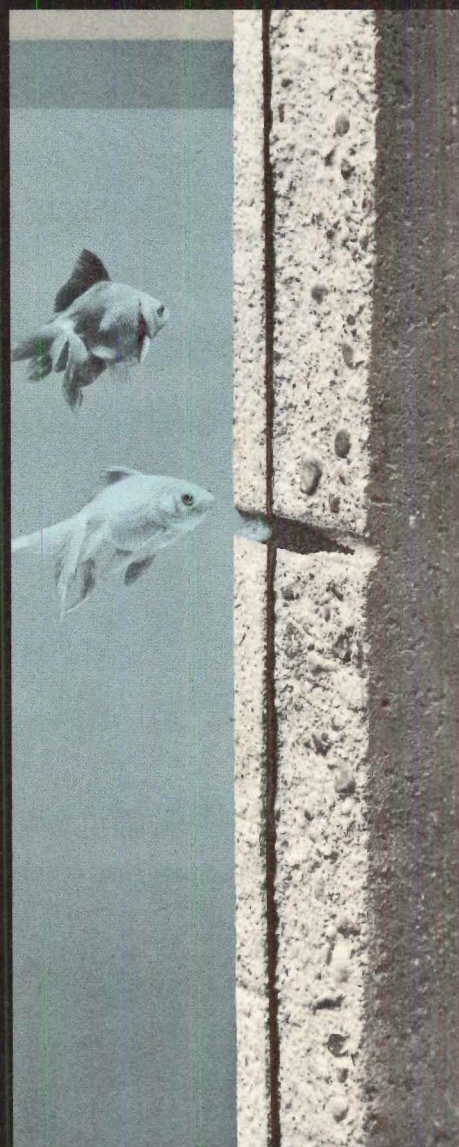




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Six Associates, Inc., Asheville, N.C.

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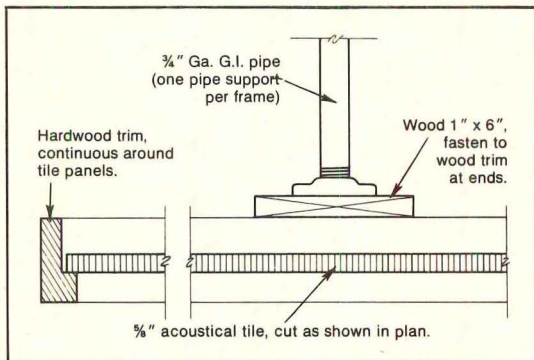
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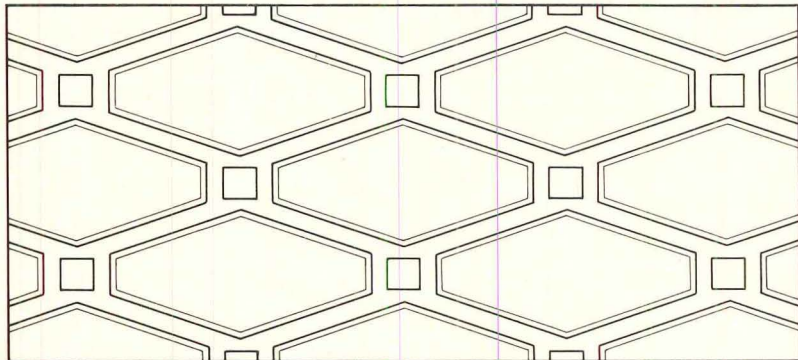
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how local, state and federal housing programs evolved, probes the economic and labor factors, reviews the fallacies of Operation Breakthrough and other instant cures. One chapter points out how unreliable are available statistics, especially those drawn from the 1950 and 1960 census reports. Another sets forth current thinking: to improve or break up the slums? how to break the white suburban noose? what new subsidies will be needed?

The author, in good journalistic fashion, airs all viewpoints impartially but lets enough of his own compassion show through to condemn all sides in what he calls this "study in national failure."

**CPM in Construction Management** by James J. O'Brien. (Second Edition.) New York: McGraw-Hill, 1971. 321 pp. \$14.50.

This book explains what CPM (critical path method) is and how to use it to get speed, accuracy and flexibility in scheduling. It explains how to do CPM by using simple arithmetic or computer calculation; it focuses on actual on-going construction

processes showing CPM in action from start to finish on large and small projects. New chapters in this new edition include "Precedence Networks," "Multiproject Scheduling," "Project Scheduling," "Management Information Systems" and some new case histories.

**The Technique of Drawing Buildings** by Richard Welling. New York: Watson-Guptill Publications, 1971. 157 pp. \$10.95.

This book demonstrates how to draw buildings from simple to ornate, from two stories to towering skyscrapers—and also how to draw other urban subjects such as bridges, dock areas, boats and highways.

Materials and tools used for drawing in line, tone and color are suggested with discussion on how to render characteristics of buildings—their brick, stone and glass textures. A variety of both new and traditional techniques are discussed, as well as specific architectural drawing problems and their solutions.

**Modular Housing—1971: Facts and Concepts** by J.A. Reidelbach, Jr. Boston: Cahners Books, 1971. 237 pp. illus. \$27.50.

Over 200 photographs, drawings and

floor plans showing modular housing production in varied stages and in finished products illustrate this book, the second in an annual series based on the author's national survey. Industry problems discussed include financing, marketing and sales, production figures, aesthetics and the architect's role, transportation building codes, government activities and financing, materials and techniques and a directory of manufacturers and suppliers.

#### Documents

[The documents listed below are available from the associations and agencies cited. Request for such documents should be directed accordingly.]

**Toward Understanding Modern Churches** 15 min. color filmstrip with record. \$12.50. Theran Film Associates, 315 Park Ave. South, New York, N.Y. 10010.

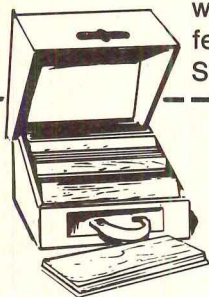
Designed for building committees, church groups and others unsure about modern church architecture, filmstrip in 16 frames shows examples of Roman Catholic as well as Protestant churches and their furnishings. The commentary deals with

[continued on page 142]

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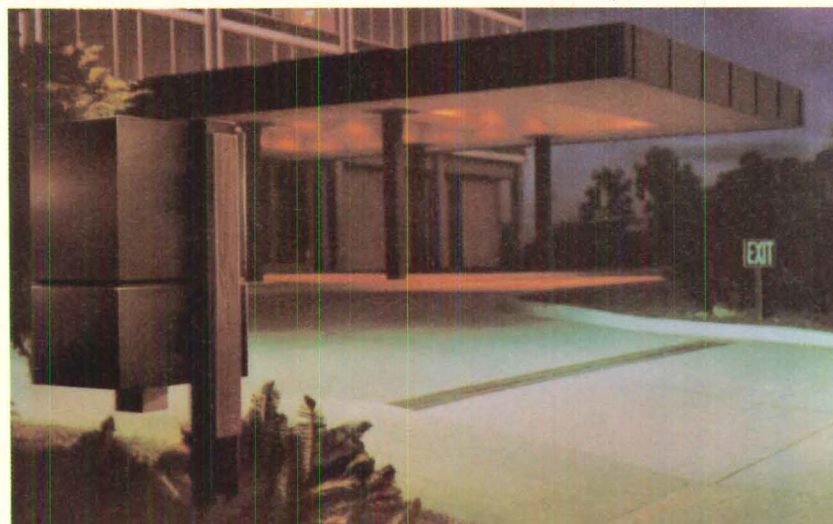
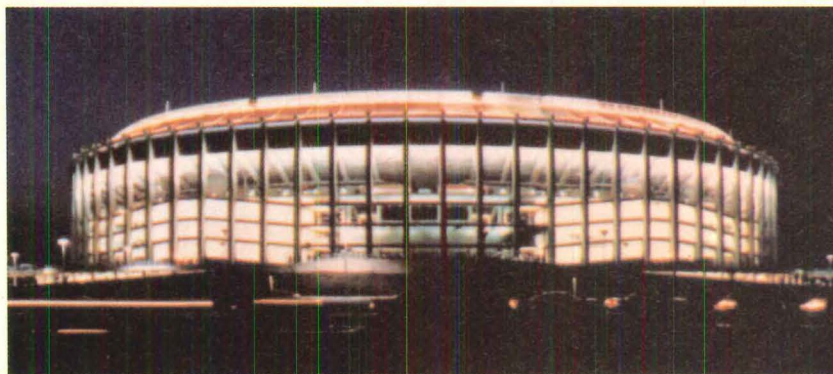
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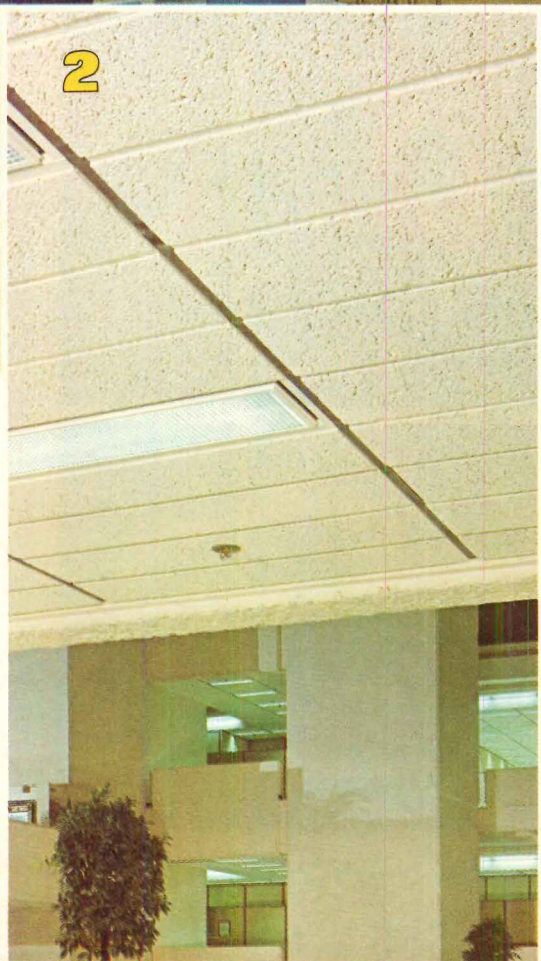




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how church architecture has evolved through traditions that are not always relevant today and stresses the relationship of worship to its surrounding environment.

The record has one side with audible tones for use with manual projectors and one side with inaudible tones for automatic projectors. The package also contains a 12-page guide containing the pictures from the filmstrip, a script of the commentary, full credits and suggestions for use with various groups.

**The International Shade Tree Conference, Inc.** *Standard Municipal Tree Ordinance.* P.O. Box 71, Urbana, Ill. 61801. \$1.

This is a 14-page booklet containing information of value to persons and municipalities interested in creating, revising and improving municipal ordinances relative to planning, maintenance and preservation of shade and ornamental trees.

**Continuing Engineering Studies Series #5.** *American Society for Engineering Education, One Dupont Circle, Washington, D.C. 20036.* \$2.

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the Albuquerque, N.M. meeting of the Society's Continuing Engineering Studies Division. Included are Technological Forecasting in the Planning of Continuing Education; Toward a more Responsible Application of Engineering, Science and Technology, New Trends for CES in the 70's, plus reports on the important workshops held during the meeting.

**Our Technical Environment: Challenge and Opportunity.** *Industry-Engineering Education Series #1-4 by ASEE's Relations with Industry Division. American Society for Engineering Education, One Dupont Circle, Washington, D.C.* \$2.

Included are 26 presentations, with 224 pages of information on such topics as communication, transportation and information systems; the urban era; goals in the 70's; engineering: a force for social change; and physical environment and engineering.

**Today's Housing Briefs.** P.O. Box 1216, Rockville, Md. 20830. \$90 per year, charter subscription: six issues.

Brief book reviews and abstracts of magazine articles relating to low- and moderate-income housing are offered in this new magazine series. Material selected includes articles on legislation and law, fi-

nance and fiscal policy, national goals programs, social concepts and environment, and new methods and materials. Each issue will contain a special guest feature representing current thinking and developments in the field of low- and moderate income housing.

**Insulation Manual—Homes/Apartments** published by the NAHB Research Foundation, Inc. Available from National Mineral Wool Insulation Association, Inc., 211 St., New York, N.Y. 10022. 44 pp. Upon request to members of NAHB; \$4 for non-members.

This manual on thermal insulation suggests benefits of insulation for builder in terms of reducing overall construction costs. Comfort facts, acoustical privacy and common thermal terms are given; actual gas and electricity rates for each of 561 localities are combined with relevant weather data into index figures.

**IES Lighting Handbook, Fifth Edition.** *Illuminating Engineering Society, 345 E. St., New York, N.Y. 10017.* \$37.50.

A practical guide to almost every type of lighting application, this handbook offers detailed information on the many developments and innovations in lighting over the past several years.

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 Architects: Mahony & Zyosec, Princeton, N. J.,  
 Kenneth De May of Sasaki, Dawson, De May & Assocs. Inc., Watertown, Mass.  
 Gen. Contractor: Glenwall Construction Co., Hawthorne, N. J.  
 Curtain Wall by Cupples Products, St. Louis, Mo.; glazing by American Paterson  
 Glass Co., Paterson, N. J.

## We help Ramapo College change

As the wooded countryside around Ramapo College changes colors, so does Ramapo College. With Vari-Tran® reflective glass, the building shown here presents an ever-changing mural that depicts the varied hues of the four seasons. The mural changes each day, often each hour.

Ramapo College is located on a spacious, wooded tract in Mahwah, New Jersey, and it was the intention of the school officials and their architects to

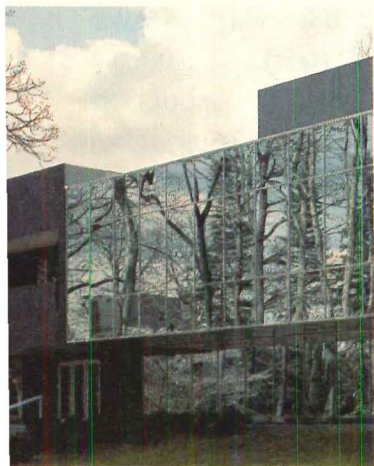
preserve and even complement this environment as much as possible. To accomplish this end, Vari-Tran was selected.

By using Vari-Tran coated glass fabricated into Thermopane® insulating units, they achieved other ends. Since Vari-Tran reflects the sun's light and less air conditioning equipment is needed to cool the building. And less energy is required to run the air conditioning. In winter, Thermopane reduces heating bills because of its insulating properties.





# hool colors every semester.



Now that Vari-Tran is available in 52 varieties of glass for buildings, it's even easier for architects to select a shade that can best reflect the environment they're designing for. Vari-Tran comes in gold, silver, grey, blue and bronze tones—plus new degrees of reflectivity, and shading coefficients. For the whole story, send for our new brochure, "Reach for a Rainbow." Libbey-Owens-Ford Company, Dept. P-672, Toledo, Ohio 43695.



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# Learning from Canada

## September 1972

Suddenly, in recent years, Canada has begun to produce some of the most influential architecture in America – precedent-setting structures such as Moshe Safdie's Habitat in Montreal, Erickson & Massey's Simon Fraser University in Vancouver, and John Andrews' Scarborough College near Toronto. At the same time, Canadian architects have been showing initiative in such diverse areas as Arctic shelter and urban transit systems.

**P/A has decided it is time to survey Canada** all at once – from Atlantic to Pacific to Arctic – to see what lessons it offers on architecture and planning. Over the past six months, our editors have met with architects, clients, officials, and civic leaders all over Canada; we have traveled its highways and subways, visited established landmarks and raw construction sites.

**What we have seen** is, of course, a parallel country to the United States – a long ribbon of intense development with corresponding variations in topography and climate. We have seen the same cars, the same hamburgers, the same TV sets in the same motel rooms; we have seen shopping centers outside Edmonton just like the ones outside Dallas.

**Yet there are meaningful differences.**

Canadians – perhaps by necessity – seem at least a little more aware that materials, land, and energy must not be wasted. And complementing their sense of economy is a recognition that the right gesture – the expressionistic silhouette or the unprecedented layout – can generate a sense of place at no real cost.

**Since Canada is a nation of 21,600,000 people**, dispersed over seven time zones, our September issue can be no more than a sampling – characteristic buildings from various regions, significant planning issues in certain localities, model government programs in the fields of building and development, applications of building technology in the Far North.

**We found**, in fact, far more to report that we could cover adequately in a single issue. September, then, will be an initial excursion across Canada, to be followed by a continuing program of visits. You won't want to miss the September trip.

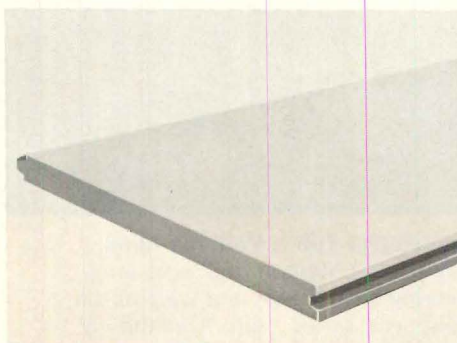
## Progressive Architecture

'The voice of architecture in America'

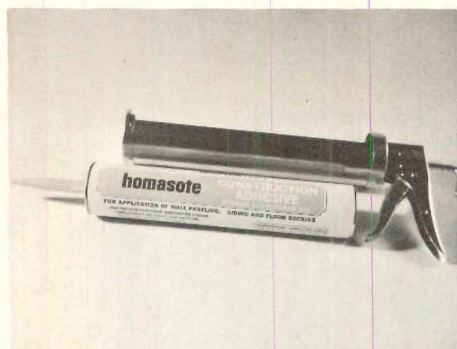


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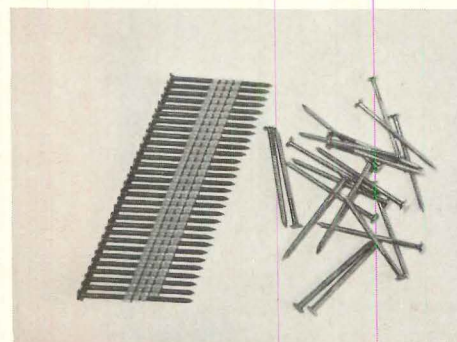
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weatherproof insulation.**



4-Way Floor Decking, 2'x8' panels, 1 1/32" thick for 16" o.c. framing; 1 3/4" thick for 24" o.c. framing.



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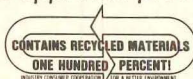


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**One-Piece Deluxe Recessed Shower.** Choice of 36" x 48" or 36" x 60". Built-in ledge and seat.



**One-Piece Recessed Shower.** Fits 36" x 36" space. Long ledge for accessories. (32" x 32" unit has corner ledges.)



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In the mode of the exotic soaking tub.

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# Notices

## Appointments

**John Haley** has joined Jova Daniels Busb Architects, Atlanta, as project coordinator.

**James M. Luckman**, who has been president of Charles Luckman Associates, architectural affiliate of Ogden Development Corporation, has been elected president of O Los Angeles.

**David Margolf, AIA**, has joined Charles Luckman Associates, Los Angeles, as director of project management.

**Reynold M. Roberts** has joined Jonathan Development Corporation, Chaska, Minn., as senior architect.

**Vincent Cangiano** has been promoted executive vice president of CE Maguire, Inc., Providence, R.I. **Francis Pierce** has been named senior vice president, and **John L. Slocum** has been appointed a member of CE Maguire, Inc. Executive Committee.

**Willis E. Bell, PE**, has been made a partner in The Shaver Partnership, Salina, Kan. and Michigan City, Ind. **James K. Perkins, ASLA**, has been appointed an associate partner and **Arthur C. Bastian, AIA**, **Rob L. Moss, AIA**, and **Herman Terzino, AIA** have been named associates.

**Victor E. Mikulich** has joined Ellerbe, Paul, Minn., as project engineer.

**William F. Moore** has joined Harold Roth and Edward Saad, Hamden, Conn., as a partner. The firm is Roth Saad Moore Architects.

**George Groner** and **Russell Harlow** have been appointed vice presidents of Castagnoli & Son, Inc., Manhasset, N.Y.

**Bob C. Brunson, Jr.** has been elected president and chief executive officer of Connell Associates, Miami, Fla.

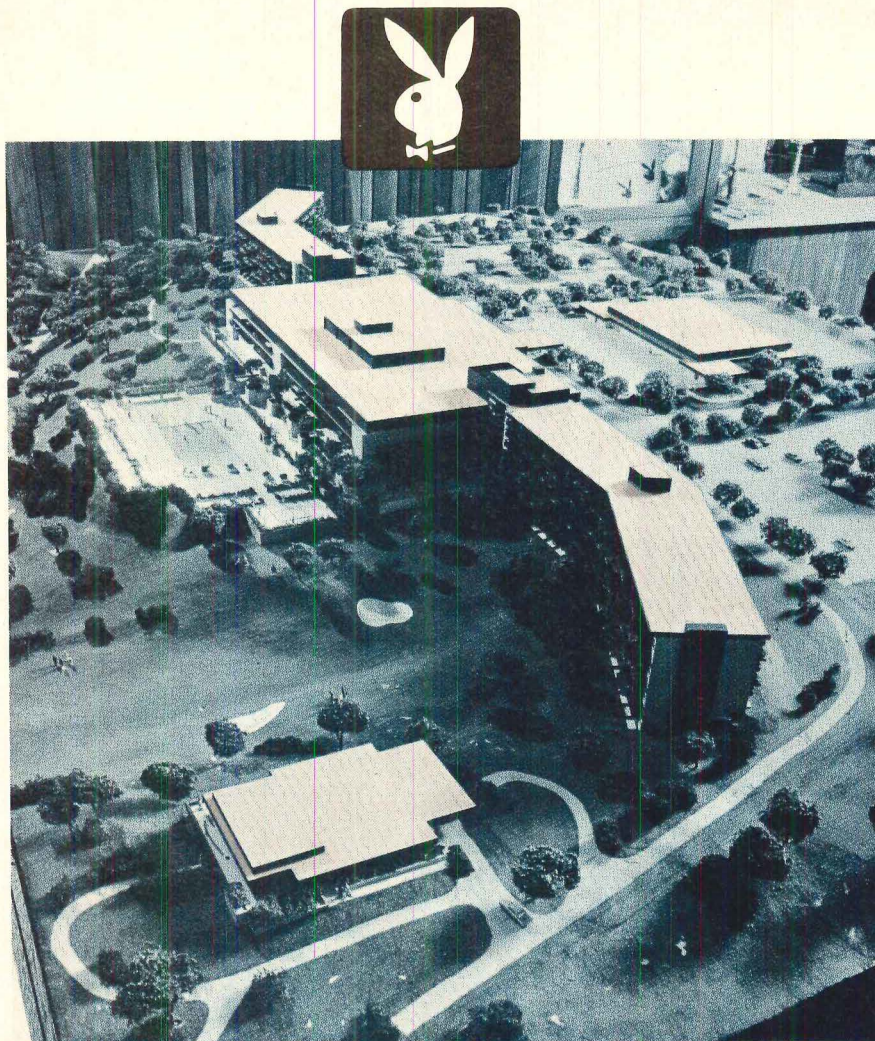
**William Dalziel** has been appointed administrator-coordinator of design and land planning for Burke, Kober, Nicolais, Architects, Los Angeles and San Francisco.

**John I. Margraf, AIA** and NCARB certified, has joined the staff of Eltinge, Graziadio & Sampson Development Company, Los Angeles.

**William B. Kuhl** and **Allen C. Pearson** have been named associates of M. Paul Friedberg & Associates, New York City.

**Lloyd Roark, FAIA**, has joined Austin & Fry, Los Angeles, as director of the division of project development.

**Richard W. Payne** has been appointed vice president and chief engineer for H.A. [continued on page 163]



**Building Contractor:** A. Epstein & Son Engineering Corp., Chicago, Ill.  
**Roofing Contractor:** Patco Roofing Corp., Newark, N. J.

## What's on top at Playboy-Great Gorge?

**Lime Crest Roofing Spar, that's what!** The marble aggregate that increases the effectiveness of roof insulation, reduces the cost of air conditioning—and promotes the comfort of all 700 guest rooms and suites in the new \$30,000,000 Playboy Club Hotel at Great Gorge, McAfee, New Jersey.

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2. Copper systems last. They're solid and reliable, like a good reputation.
3. In the long run copper systems save money by reducing call-backs for service or replacement.
4. A substitute for copper is just that — a substitute.

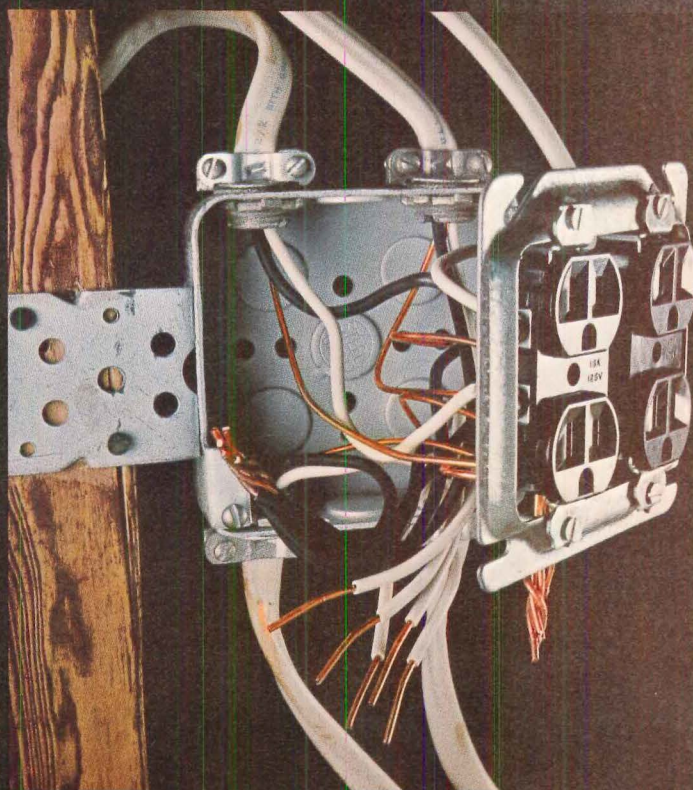
## Copper Roofing Systems

A copper standing-seam roof is beautiful... either bright, like this one, or in natural brown tones, or patinated. Copper adds value, and its life-of-the-building durability is a known fact.

Or, bond copper's beauty and trouble-free service to cost saving structural panels of plywood and other substrates, and you have economical, easy-to-install, lightweight roofing, fascia, and wall systems.

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There's no real substitute for copper... it's the most economical in the long run.

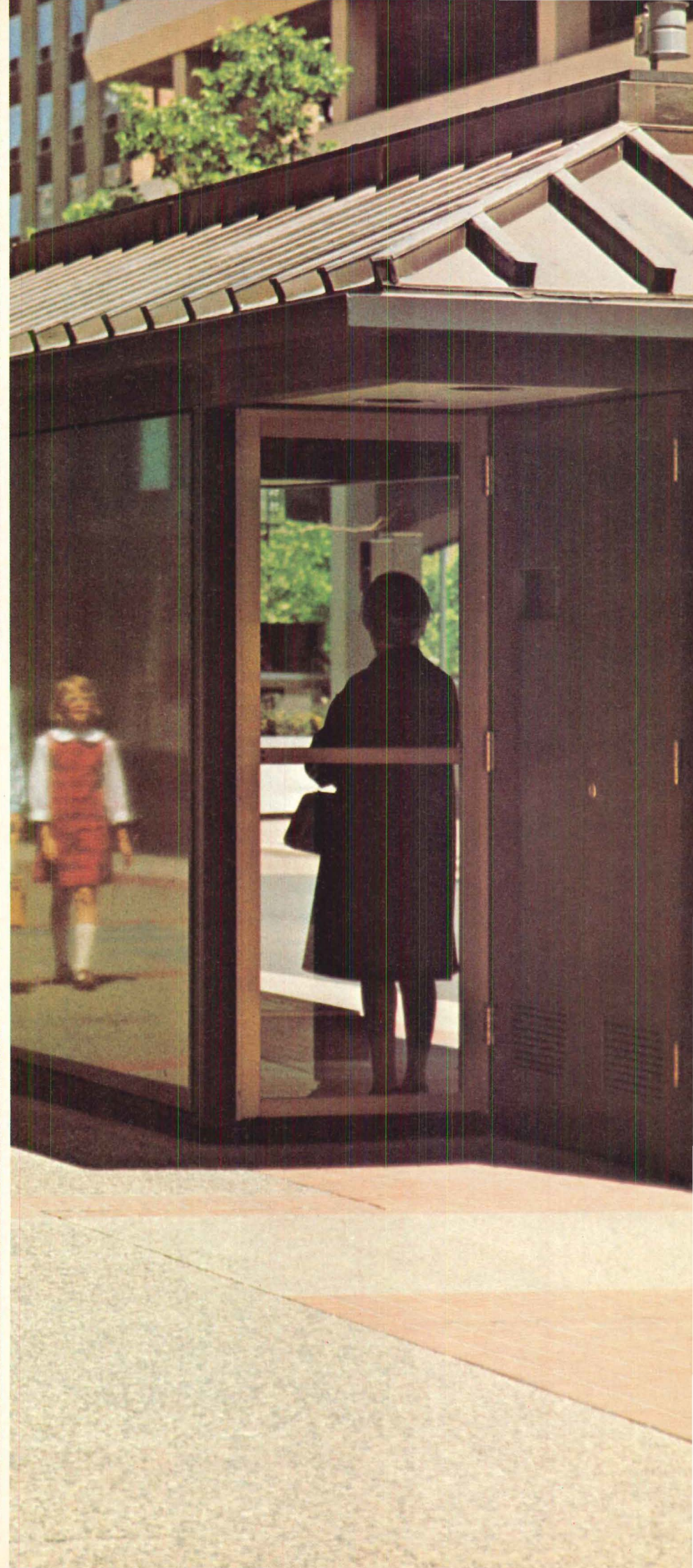
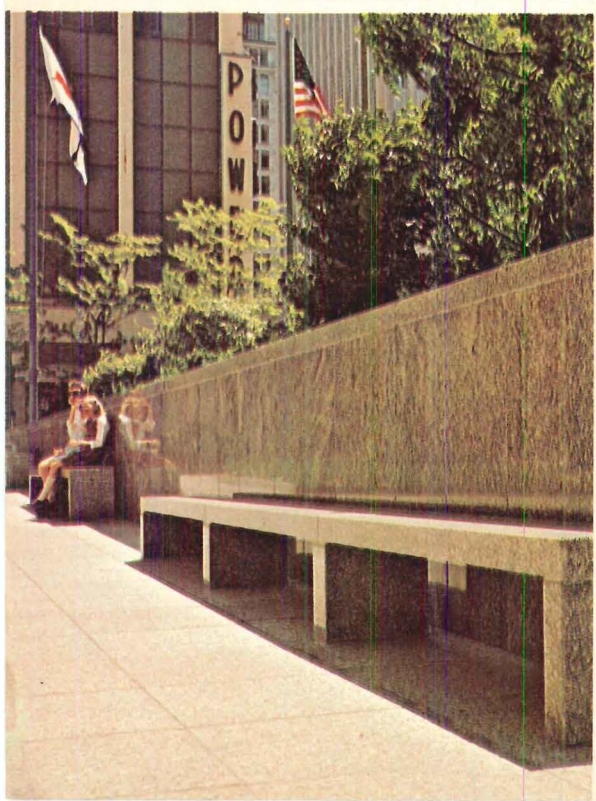
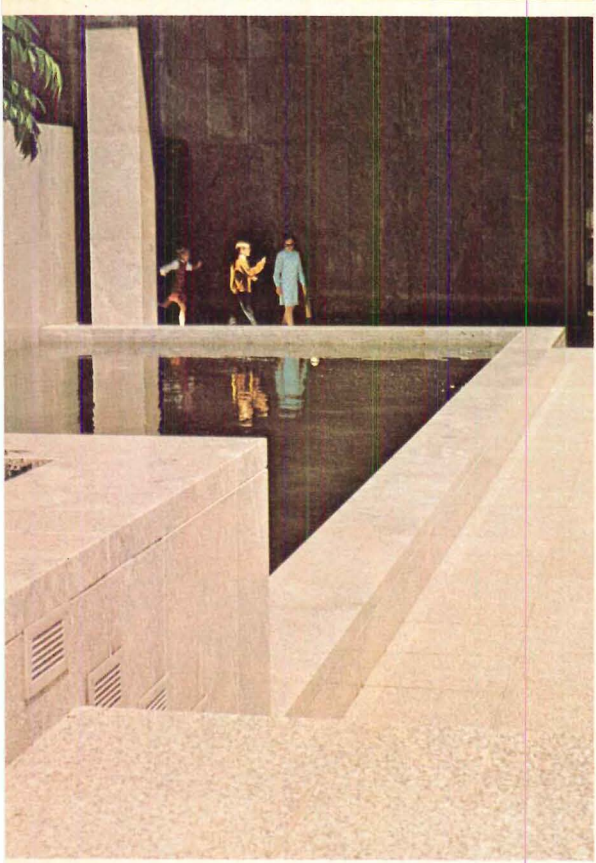
If you'd like details on these, or any other building uses of copper and its alloys, brass and bronze, just write us.

Copper Development Association Inc. 405 Lexington Avenue, New York, N.Y. 10017



# COUNT ON COPPER







# If granite is so expensive, why didn't someone tell the Minneapolis Downtown Council?

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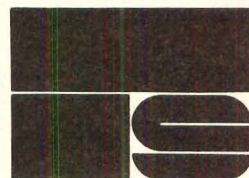
*over 20 producing quarries*

Nicollet Mall

Architect:  
Lawrence Halprin & Associates

Engineering & Planning:  
Barton-Aschman Associates, Inc.

General Contractor:  
City of Minneapolis



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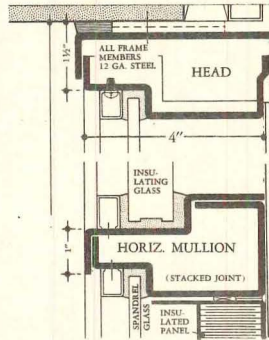
# HOPE'S

HOPE'S WINDOWS  
A DIVISION OF ROBLIN HOPE'S  
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## How Hope's Serves the Creative Architect

This three-section building for Standard Oil Company (Indiana) typifies the large scale, highly specialized project on which Hope's reputation for quality custom work has been built. Wigton-Abbott Corporation, designers and constructors, specified installation of more than 180 monumental size steel custom windows by Hope's. Constructed of 12-gauge pressed steel members, the fixed windows are 30 to 35 feet high and over five feet wide. The installation provides an intriguing example of pressed metal's broad adaptability; steel was chosen for its strength, durability, rigidity, and economy. Note that the detail of the horizontal mullion is designed to accommodate two different thicknesses of glass in the same member, while keeping the outside glass surfaces in the same plane. The

attractive appearance is enhanced by finishing frames, beads and panels each in a different color, with Hope's unusually durable Ultra-Coat finish.




The Hope's pressed steel subframes used in the Standard Oil research center were installed in five sections to accommodate three sections of clear glass, interspersed with two of opaque spandrel glass. The vertical unit, with spandrel surface covering structural

framing as well as ceiling and floor construction, functions as both window and window wall. The frames, formed in a tubular shape, provide the glass with a third-dimensional framing effect. The installation typifies the individual choices available to the architect using Hope's pressed steel subframes. They are custom made to suit the requirements of each installation, offering the designer broad versatility. Frames can be designed to accommodate: ventilated or fixed windows, panels, doors, grilles, louvers and all types of glass. Ask Hope's engineers to work with you on your forthcoming construction plans. Your creative ideas provide a challenge they welcome. Hope's Windows, Jamestown, New York 14701.

WIGTON-ABBOTT CORPORATION DESIGNERS and CONSTRUCTORS PLAINFIELD, NEW JERSEY  
RAGNAR-BENSON GENERAL CONTRACTOR PHOTO BY HEDRICH-BLESSING







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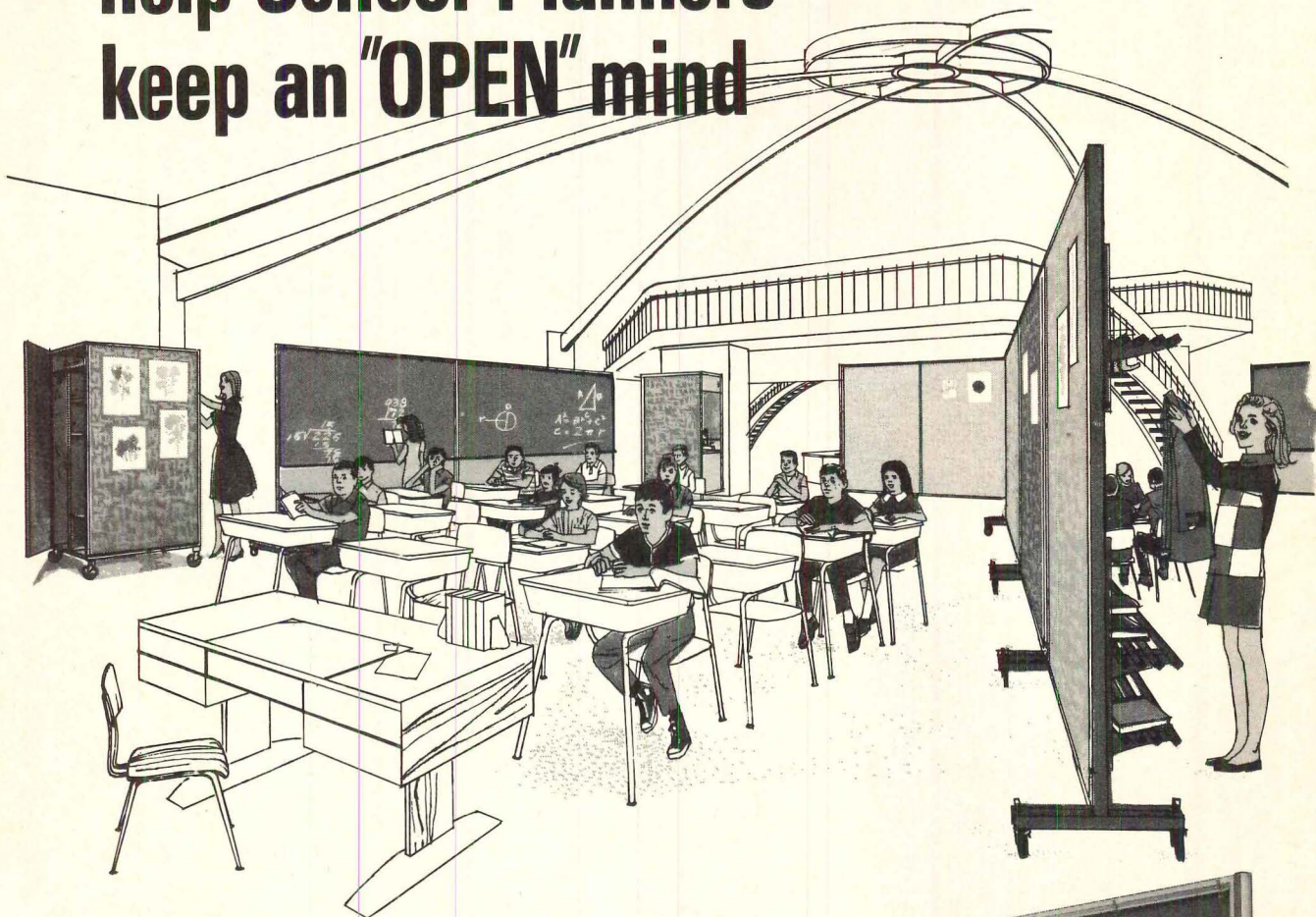


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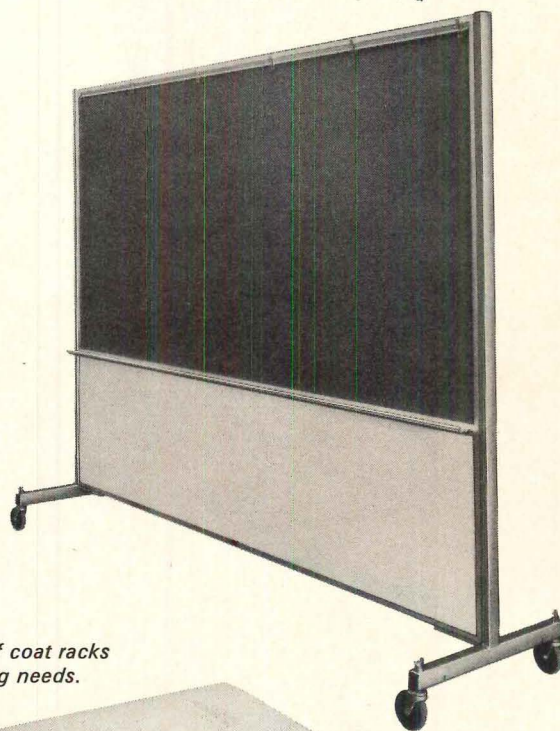


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*The RDF's are just one of a most complete line of coat racks and wardrobes designed to meet today's changing needs. Write for our complete catalog SL-510.*



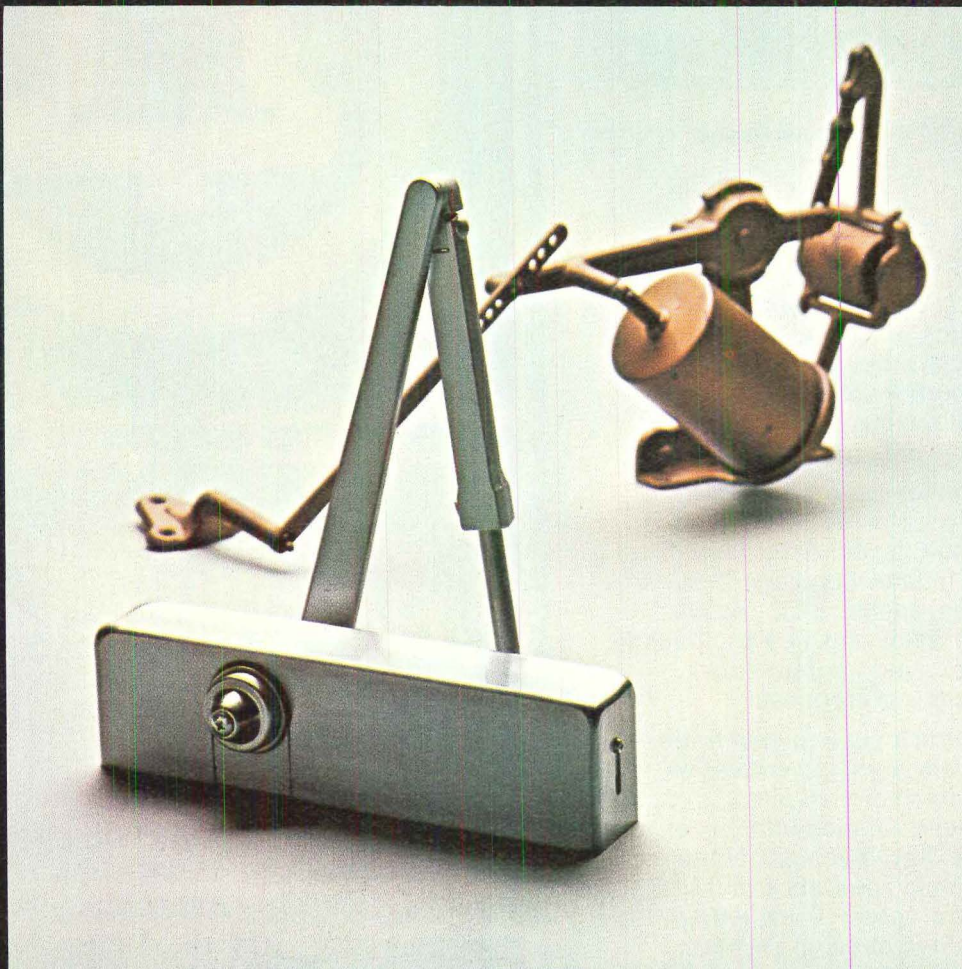
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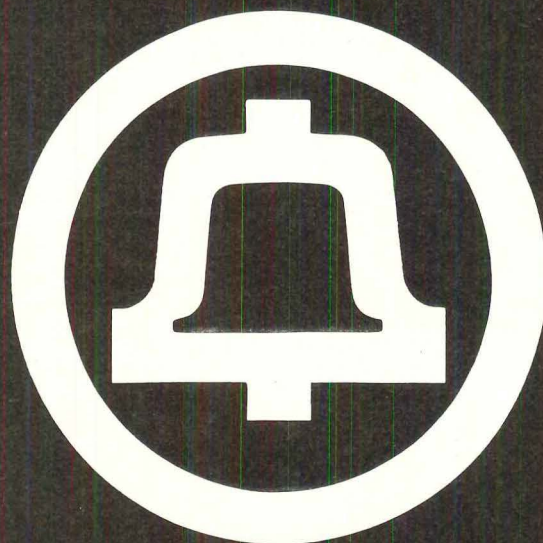
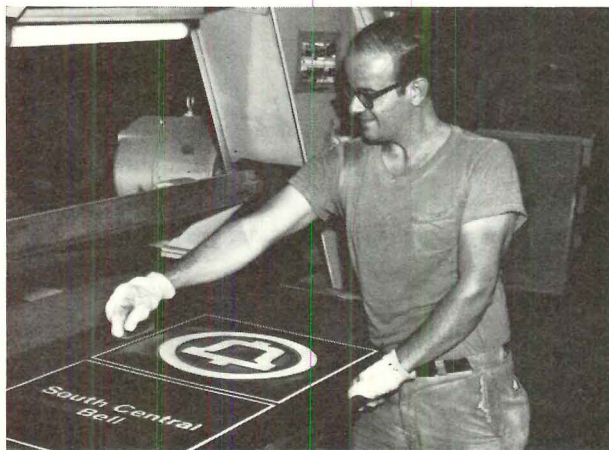
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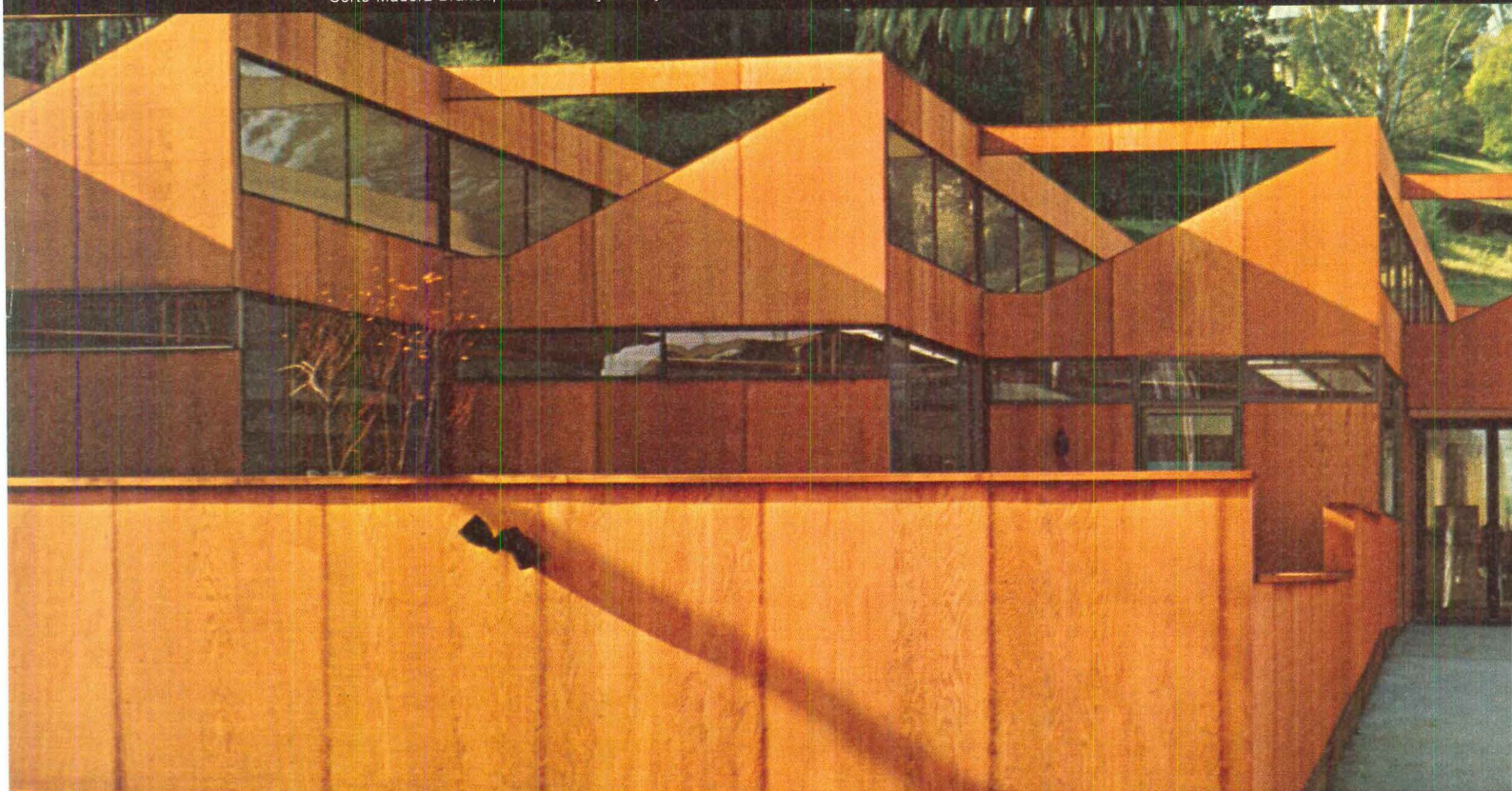
## Kinneair Rolling Grilles





Reedland Woods School, Tiburon, Calif. Architect: Ron D. Young, Cupertino, Calif.

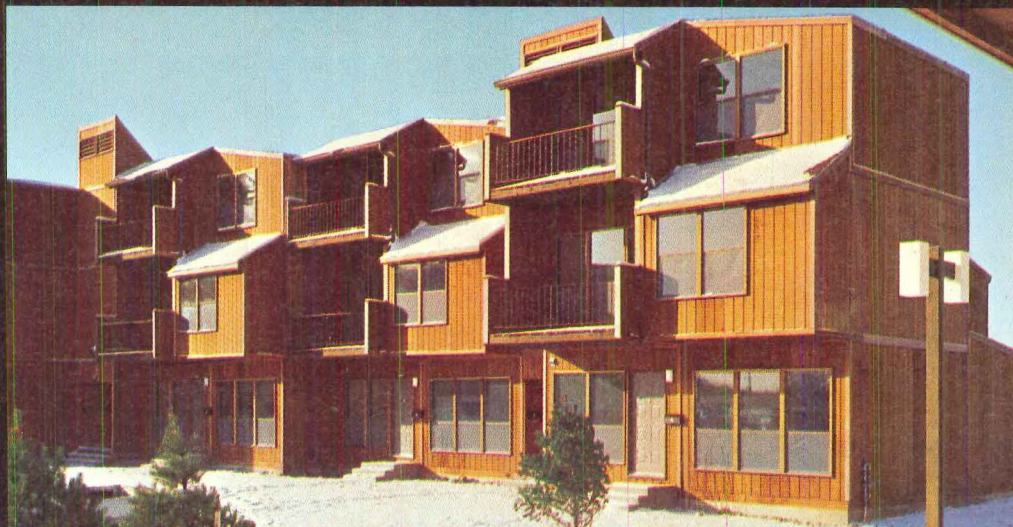
Corte Madera Branch, Marin County Library. Architects: Smith Barker Hanssen, A.I.A., San Francisco, Calif.



Redwood Plywood.

And a warm, inviting new look  
for civic architecture.





Industrialized Housing, HUD's Operation Breakthrough prototype site, Kalamazoo, Mich.  
Housing Systems Producer: Hercoform Mktg., Inc., Wilmington, Del.  
Architects: Armstrong & Salomonsky, Ltd., A.I.A. Richmond, Va.



ember when most American public buildings derived design and impressive bulk from classical architecture? Are three examples of contemporary civic buildings that lost the austere, impersonal "institutional look"—due in large measure to the use of California redwood plywood. Its warm, natural visual appeal is only the beginning of good plywood's virtues. Its clear heartwood face veneers resistant to decay and the erosive effects of weather. It takes and holds a wide variety of finishes longer than any wood. And its low flame-spread value established by Underwriters' Laboratories, Inc., allows redwood plywood

to be used in many applications otherwise closed to untreated wood products.

In actual construction, redwood plywood has other practical advantages. Its large panel sizes—4 feet by 8, 9 or 10 feet—make possible the economy and ease of modular installation. And the panels can be applied directly to studs—without building paper—thanks to redwood plywood's high insulation values.

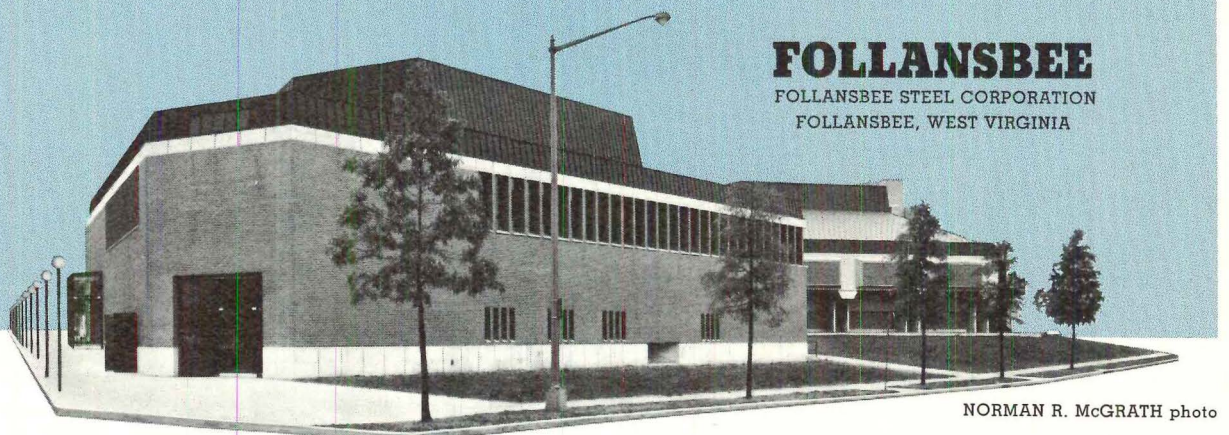
Beauty, economy, practicality—three reasons more and more leading architects are specifying redwood plywood in their plans for civic building projects.

**CALIFORNIA REDWOOD ASSOCIATION** Write Dept. PI for specification and technical information on redwood plywood.  
Montgomery Street, San Francisco, California 94111 • Plywood-producing member mills: Simpson Timber Company • The Pacific Lumber Company



Professional critics have been virtually unanimous in regarding Harry Weese's Arena Stage as a major landmark in American architecture. Wholly original in concept, superbly functional, and elegant in detailing, it has "an ambiance which suggests that magic is made, after all, in a working place," as one commentator remarked. Among other significant developments which were foreshadowed in this exciting structure was the utilization of roof perimeters as an important element in contemporary design, particularly when executed in metal.

Our initial gratification when Mr. Weese and his associates selected Follansbee Terne for these roof areas has thus merely been enhanced with the passage of time. And we were therefore doubly gratified, nearly a decade later, when Terne was again specified on the adjacent Kreeger Theater, a building of comparable distinction.



KREEGER THEATER, WASHINGTON, D.C. WITH ARENA STAGE IN BACKGROUND.  
ARCHITECT: HARRY WEESE AND ASSOCIATES, CHICAGO, ILLINOIS, WASHINGTON, D.C.  
ROOFER: MATHY COMPANY, FAIRFAX, VIRGINIA.



es continued from page 150

ms & Associates, Inc., Columbus, Ohio.  
William E. Simpson, AIA, and Laura Dav-  
rt have been named associates of Esh-  
Homsey, Dodge & Davis, San Fran-  
Calif.

Edward Slaughter has joined GHQ,  
Merritt Island, Fla., as a principal and  
president.

Karl Justin, AIA, has been appointed  
president for administration of the New  
architectural office of John Carl Warn-  
FAIA.

bert J. Schaefer and Henry W. Schirmer  
announced the ownership addition in  
rm, of John L. Greer, vice president and  
urer and Daniel S. Kilby, vice president  
ecretary. The firm, located in Wichita  
opeka, Kan., will now be Schaefer  
mer & Associates P.A.

e H. Chambers Company, Baltimore,  
has elected the following officers: Rich-  
A. Farrar, Edward L. Hoffert, AID, John  
alsh, senior vice presidents; Earl R.  
hahey, James E. Peterson, Richard S.  
as, Ronald N. Robinson, vice presi-  
; James R. Hiatt, secretary. Richard A.  
r was also elected treasurer.

#### addresses

Greiner Company, Inc., The Greiner  
ing, 5601 Mariner St., Tampa, Fla.  
2.

ancis J. Goldberg, 167-175 Rock  
Glen Rock, N.J. 07452.

swell Cooke Architect, 554 Chapel St.,  
Haven, Conn. 06511.

siello & Associates, Mechanics Na-  
Bank Tower, Worcester Center, Wor-  
r, Mass.

#### firms

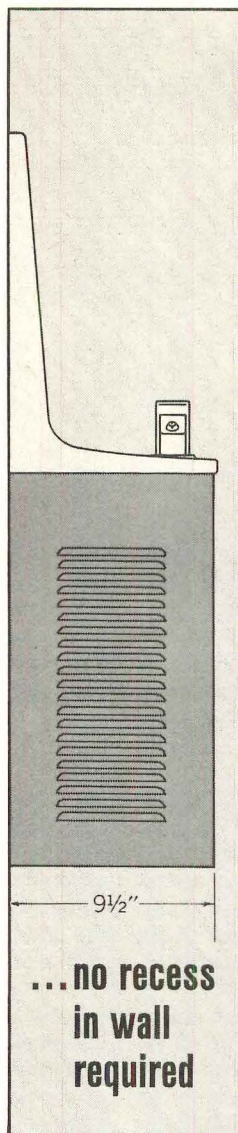
lin H. Smith, AIA, has formed Delta Ar-  
ctural Associates, Phoenix Building,  
City, Mich. 48706.

c inc—Design-Architecture Consul-  
718 West Hubbard St., Chicago, Ill.  
D, headed by Robert G. Lyon.

in G. Cantor, PE, and Ysrael Seinuk,  
ave formed The Office of Irwin G. Can-  
19 Third Ave., New York, N.Y. 10022.

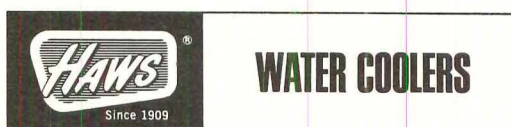
lander and Melander, Architects, have  
ed offices at 800 Lonsdale Building, Du-  
Minn., which will serve as a continuation  
practice of A. Reinhold Melander.

bert Tennenbaum, AIA, AIP, has formed  
enbaum Associates New Community  
ing/Design/Architecture, The Ameri-  
City Building, Wincopin Circle, Colum-  
Id. 21044.



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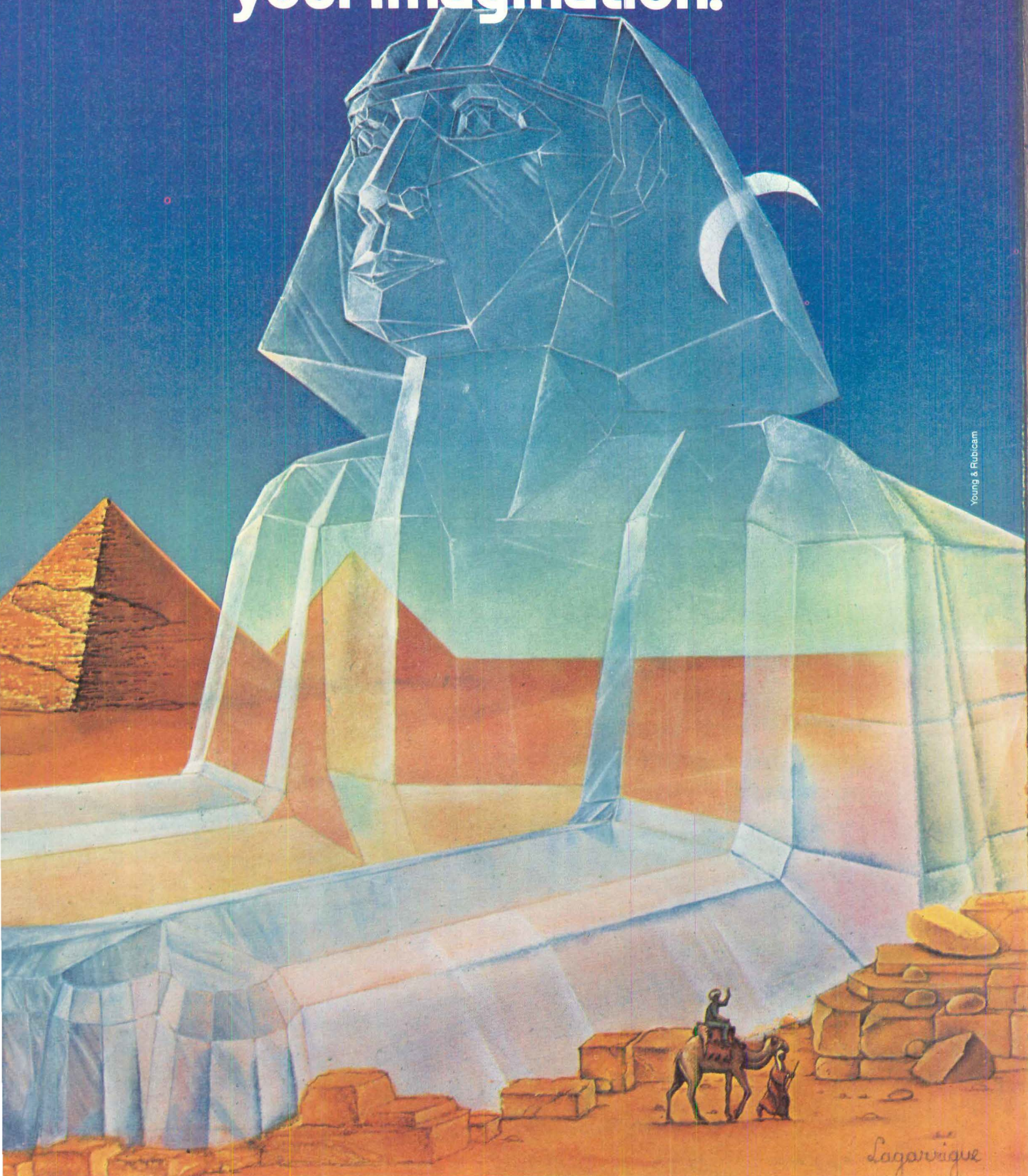
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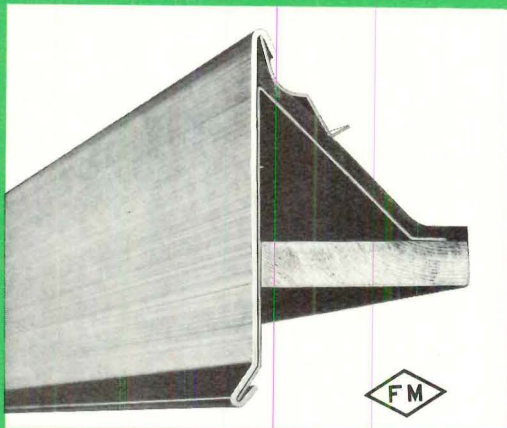
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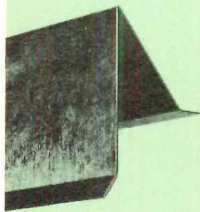
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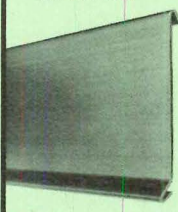
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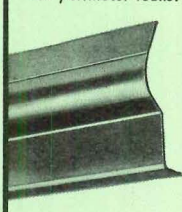
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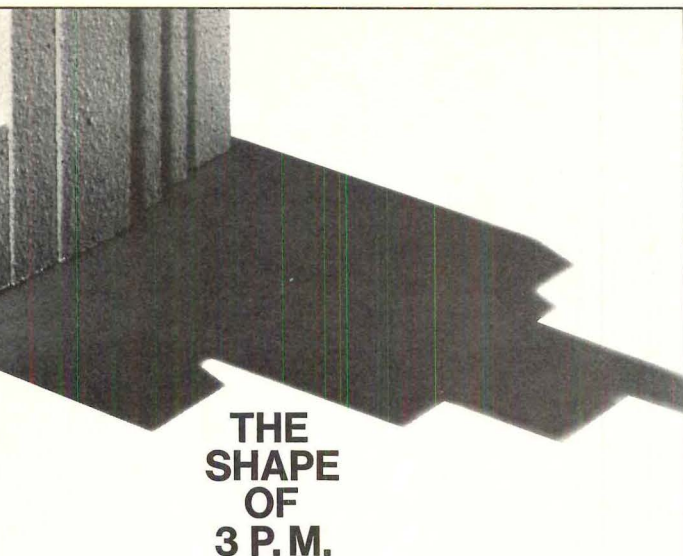
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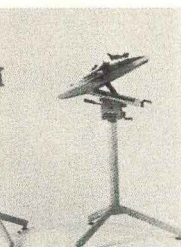
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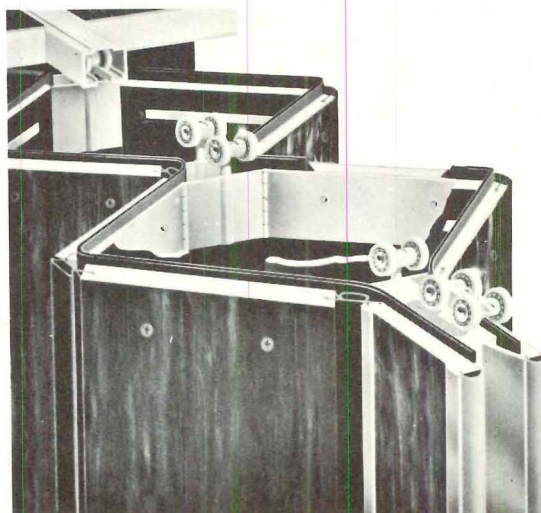
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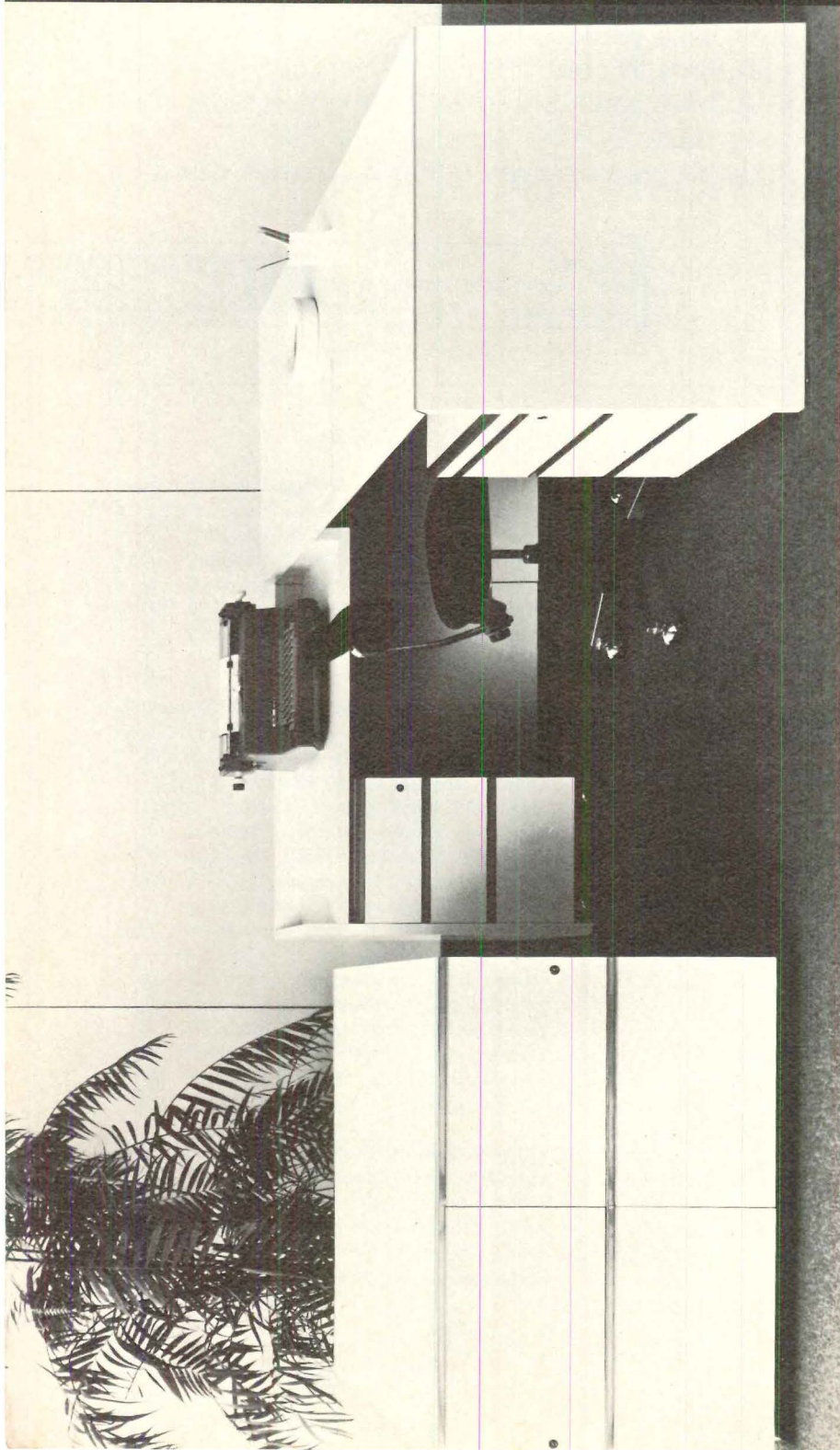
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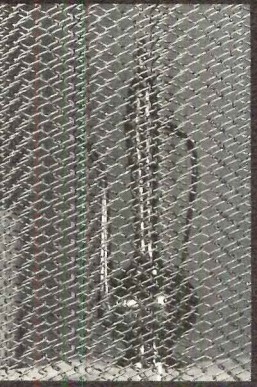




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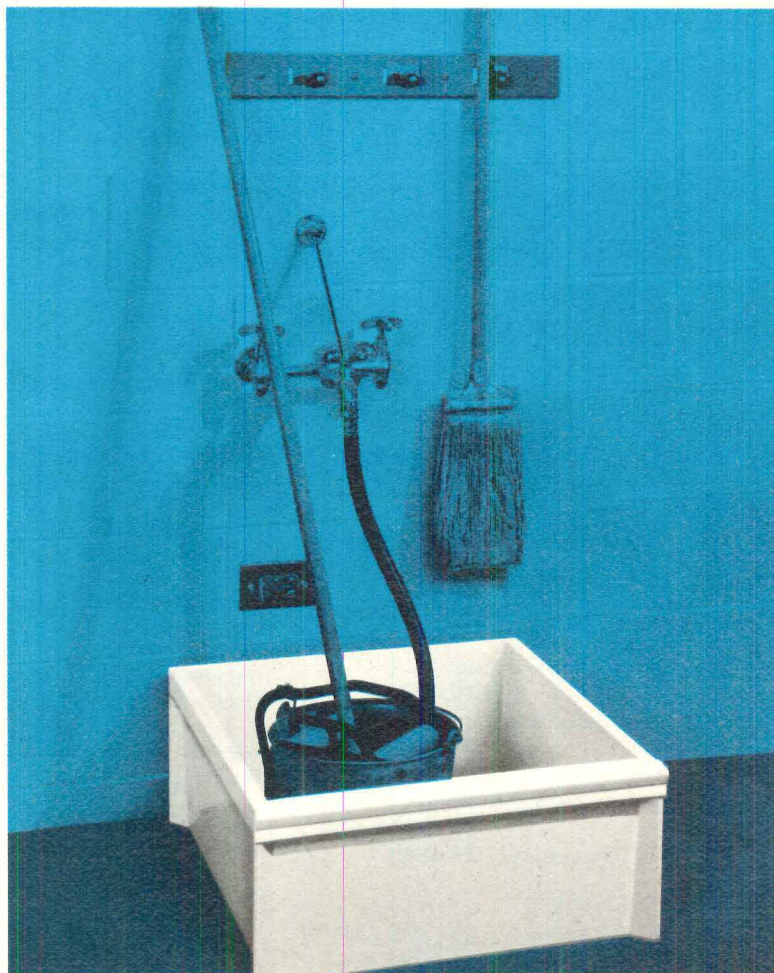
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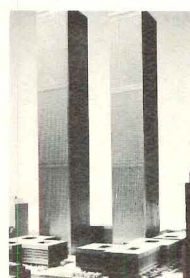


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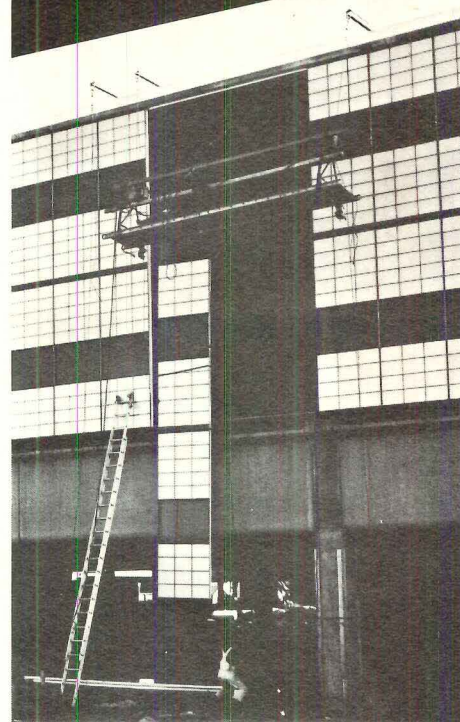
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